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**INDIANA STATE TEACHERS' RETIREMENT FUND**

**THE REPORT OF THE  
ANNUAL ACTUARIAL VALUATION**

**AS OF**

**JUNE 30, 2003**

**Gabriel, Roeder, Smith & Company**  
**Consultants and Actuaries**

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**GABRIEL, ROEDER, SMITH & COMPANY**  
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February 20, 2004

The Board of Trustees  
Indiana State Teachers' Retirement Fund  
Indianapolis, Indiana

Dear Board Members:

Submitted in this report are the results of the June 30, 2003 actuarial valuation of the Indiana State Teachers' Retirement Fund.

The relevant member census data and the asset information for this valuation were furnished by your Executive Director and Staff. Their efforts and cooperation in furnishing these materials are acknowledged with appreciation. We did not audit the information provided, but we did review it for reasonableness and compared it with the prior year's submission for consistency.

Since the last valuation, there have been no changes in the plan provisions (see Section D).

The actuarial assumptions were adopted by the Board pursuant to the Experience Study dated August 14, 2003 and are summarized in Section G. In order to minimize the fluctuations in the value of the plan assets due to market volatility, we have continued to use a smoothed market value of assets method adopted by the Board. This method was first implemented for the June 30, 2002 actuarial valuation.

Your attention is directed to the Summary of Valuation Results on pages 1 through 2 and the Comments on pages A-1 and A-2.

The valuation was completed under the supervision of Members of the American Academy of Actuaries and was prepared using generally accepted actuarial principles and in accordance with standards of practice prescribed by the Actuarial Standards Board. To the best of our knowledge, this report is complete and accurate and the actuarial methods and assumptions produce results which are reasonable.

We welcome comments from the Board on the contents of this report.

Respectfully submitted,

  
Judith A. Kermans, EA, MAAA

  
Kenneth G. Alberts

JAK:clb:lr

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# **SUMMARY OF RESULTS**



**SUMMARY OF KEY VALUATION RESULTS**  
**JUNE 30, 2003**

	<b>CLOSED PLAN</b>	<b>NEW PLAN</b>	<b>ISTRF TOTAL</b>
<b>Fund Members</b>			
Retired Members and Beneficiaries			
Number	35,627	608	36,235
Annual Annuity and Pension Payments	\$ 516,616,930	\$ 10,447,457	\$ 527,064,387
Inactive Members			
Number - Vested	4,612	671	5,283
Number - Non Vested	10,996	19,407	30,403
Active Members			
Number	43,705	29,936	73,641
Annual Payroll	\$ 2,448,271,197	\$1,136,863,716	\$ 3,585,134,913
<b>Accrued Liabilities - Annuities and Pensions</b>			
Retired Members and Beneficiaries	\$ 4,832,820,938	\$ 107,684,111	\$ 4,940,505,049
Inactive Members	358,669,897	54,706,948	413,376,845
Active Members	8,163,375,605	1,230,081,557	9,393,457,162
Total	\$13,354,866,440	\$1,392,472,616	\$14,747,339,056
<b>Funding Value of Assets</b>	\$ 5,728,553,155	\$825,811,772	\$ 6,554,364,927
<b>Market Value of Assets</b>	\$ 5,379,966,489	\$775,560,519	\$ 6,155,527,008
<b>Unfunded Actuarial Accrued Liability</b>	\$ 7,626,313,285	\$566,660,844	\$ 8,192,974,129
<b>Funded Ratios (Funding Value Basis)</b>			
Retired Member Annuity Liabilities	84.8%	84.8%	
Retired Member Pension Liabilities	50.5%	13.9%	
Retired Member Total Liabilities	58.6%	23.2%#	
Active and Inactive Member Annuity Contributions	100.0%	100.0%	
Active and Inactive Member Pension Liabilities	0.0%	37.2%#	
Active and Inactive Member Total Liabilities	34.0%	62.3%	
All Annuity and Pension Liabilities	42.9%	59.3%	
<b>Computed Employer Contribution Rate for Fiscal Year 2004-2005*</b>			
Normal Cost	5.99%	6.20%	6.06%
Unfunded Actuarial Accrued Liability	13.32%	2.09%	9.90%
Total	19.31%	8.29%	15.96%

# Currently, there are enough assets in the New Plan employer contribution reserve to cover the unfunded portion of the retiree liabilities. If an asset transfer of \$82,676,560 were made from the employer contribution reserve to the retiree reserve, then the retiree liabilities would be 100% and the active and inactive member pension liabilities would be 37% funded in the New Plan. As a result, the funded percentages on this page and page 2 may not match the percentages on the historical schedules in section B where assets and liabilities are compared in total.

\* For additional information on Contribution Rates see page A-3.

**SUMMARY OF KEY VALUATION RESULTS FOR PRIOR YEAR**  
**JUNE 30, 2002**

	<b>CLOSED PLAN</b>	<b>NEW PLAN</b>	<b>ISTRF TOTAL</b>
<b>Fund Members</b>			
Retired Members and Beneficiaries			
Number	34,646	108	34,754
Annual Annuity and Pension Payments	\$ 480,689,995	\$ 1,662,264	\$ 482,352,259
Inactive Members			
Number - Vested	4,757	562	5,319
Number - Non Vested	11,314	17,529	28,843
Active Members			
Number	47,510	27,873	75,383
Annual Payroll	\$ 2,604,955,746	\$1,004,514,690	\$ 3,609,470,436
<b>Accrued Liabilities - Annuities and Pensions</b>			
Retired Members and Beneficiaries	\$ 4,411,727,837	\$ 17,338,655	\$ 4,429,066,492
Inactive Members	342,908,378	40,568,452	383,476,830
Active Members	8,743,141,816	1,108,976,098	9,852,117,914
Total	\$13,497,778,031	\$1,166,883,205	\$14,664,661,236
<b>Funding Value of Assets</b>	\$ 5,555,352,257	\$621,222,272	\$6,176,574,529
<b>Market Value of Assets</b>	\$ 5,147,174,967	\$575,578,213	\$5,722,753,180
<b>Unfunded Accrued Liability</b>	\$ 7,942,425,774	\$545,660,933	\$ 8,488,086,707
<b>Funded Ratios</b>			
Retired Member Annuity Liabilities	100.0%	100.0%	
Retired Member Pension Liabilities	57.6%	100.0%	
Retired Member Total Liabilities	63.5%	100.0%	
Active and Inactive Member Annuity Contributions	100.0%	100.0%	
Active and Inactive Member Pension Liabilities	0.0%	36.4%	
Active and Inactive Member Total Liabilities	30.3%	52.5%	
All Annuity and Pension Liabilities	41.2%	53.2%	
<b>Computed Employer Contribution Rate for Fiscal Year 2003-2004</b>			
Normal Cost	7.39%	7.53%	
Unfunded Accrued Liability	10.97%	1.97%	
Total	18.36%	9.50%	

# **SECTION A**

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## **Valuation Results**

## COMMENTS

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### **Contribution Rates**

Page A-3 shows the computed contribution rates for the Closed Plan, the New Plan and the combination of the two plans. It is this combined column that represents the level percent of payroll funding for the ISTRF. The computed contribution rate for the Closed plan is shown for comparison purposes only, since this plan is funded on a pay-as-you-go basis. The computed contribution rate for the New plan is calculated as if it were a stand-alone plan.

### **Plan Provisions**

There have been no changes in plan provisions since the last actuarial valuation. The ad-hoc COLA effective January 1, 2004 pursuant to IC 5-10.2-5-34.4 has been taken into consideration for the purpose of calculating plan liabilities.

### **Plan Assumptions**

The actuarial assumptions and methods used in this valuation were adopted by the Board pursuant to the Study of Experience dated August 14, 2003 covering the period from July 1, 1996 through June 30, 2002.

### **Experience**

#### **A) Data**

Data for the valuation was provided by ISTRF from its new system. The implementation of the new system resulted in some inconsistencies in reported membership, such as the number of retirees in the new plan this year compared to the number last year and the number of members retiring from the new plan during the year. These inconsistencies have been reported to staff and are currently believed to be the result of improved reporting.

With the improved reporting, we hope to track additional information that has traditionally been unavailable. The additional information includes:

- 1) July 1 retirees. We have assumed that these retirees are reported as active members for the June 30 valuation. For Teacher plans, July 1 retirees are a special case and should be treated as retirees;
- 2) Federally funded teachers. Currently all federally funded teachers along with their member and employer contributions are reported in the Closed Plan. This resulted in an overstatement of Closed Plan liabilities and an understatement of New Plan liabilities. This also accounts for many of the 1,200 members with less than 5 years of service reported as Closed Plan members;

- 3) Unused sick leave lump sum payments at retirement included in Final Average Pay (FAP). Data should be collected to verify the 2% load that is used in the valuation to account for these lump sum payments in FAP.

## **B) PSF**

The Pension Stabilization Fund (PSF) was established as a mechanism to partially pre-fund liabilities in the Closed Plan. We understand that, during the next couple of years, contributions to the PSF will be suspended and PSF funds will be used to pay for pensions due from Closed Plan members. We do not recommend this as it will result in an additional burdening on future generations of tax payers as the benefits promised to current teachers become due. It is expected that pension payments to closed plan members will peak sometime around 2021.

## **C) Assets**

Currently, the Retired Member Annuity Liability and the Retired Member Pension Liabilities are less than 100% funded in the New Plan. This is partly the result of changes in Retired member data from year-to-year as described in A) above. We recommend that a reserve transfer of \$82,676,590 be made from the Employer Reserve for Active Members to the Retired Member Reserve to restore the balance between assets and liabilities.

## **D) Current Year**

Unfavorable investment experience during the year (see page B-6) and employer contributions below the recommended level percent-of-payroll amount would have resulted in a decrease in the funding status of ISTRF had it not been for assumption changes.

## **Recommendations**

Gabriel, Roeder, Smith & Company recommends the following:

- Recognize the combined contribution rate of 15.96% of total payroll shown on page A-3 as the level rate necessary to fund ISTRF benefits.
- In the absence of pre-funding the Closed Plan, continue to make contributions to the PSF and defer withdrawals from the PSF.
- Collect/supply additional information for the purpose of studying and/or identifying 1) July 1<sup>st</sup> retirees; 2) Federally Funded Teachers; and 3) Unused Sick Leave lump sum paid upon retirement.
- Establish a dialog with the fund's legal counsel and accountants to determine our data needs for calculating the disclosures required by the Governmental Accounting Standards Board (GASB).

**COMPUTED EMPLOYER CONTRIBUTION RATES**  
**JUNE 30, 2003**

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<b>Contributions for</b>	<b>Employer Contributions As %s of Active Payroll For Fiscal Year 2004-2005</b>		
	<b>Closed Plan 36-Year Amortization of UAAL</b>	<b>New Plan 36-Year Amortization of UAAL</b>	<b>Totals 36-Year Amortization of UAAL</b>
<b>Normal Cost:</b>			
Age and Service Pensions	5.73%	5.94%	5.80%
Disability and Death-in-Service	0.26%	0.26%	0.26%
<b>Totals</b>	<b>5.99%</b>	<b>6.20%</b>	<b>6.06%</b>
<b>Unfunded Actuarial Accrued Liability (UAAL):</b>			
Retired Members and Beneficiaries	3.64%	0.32%	2.52%
Active and Inactive Vested Members	9.68%	1.77%	7.38%
<b>Totals</b>	<b>13.32%</b>	<b>2.09%</b>	<b>9.90%</b>
<b>Computed Employer Contribution Rates</b>	<b>19.31%</b>	<b>8.29%</b>	<b>15.96%</b>
<b>\$ Contribution Based on Computed Rates</b>	<b>\$ 516,000,000</b>	<b>\$ 103,000,000</b>	<b>\$ 619,000,000</b>
<b>2004-2005 Expected Employer Contribution Amount Based on Budgeted Rates</b>	<b>\$ 449,000,000</b>	<b>\$ 112,000,000</b>	<b>\$ 561,000,000</b>

**COMMENTS REGARDING CONTRIBUTION RATES**

- The Expected Employer Contribution Amount shown for the Closed Plan is the amount of pension benefits expected to be paid in the 2004-2005 fiscal year. This amount expressed as a percentage of valuation payroll is 18.34%.
- The Expected Employer Contribution Amount shown for the New Plan is the current Board-adopted rate of 9% of payroll multiplied by the projected valuation payroll.
- The dollar contribution based on computed rates is a projection to the 2004-2005 fiscal year at the 4.5% payroll growth rate assumption and is provided for comparison purposes.

# COMMENTS REGARDING DEVELOPMENT OF ASSETS AND LIABILITIES

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## ASSETS

- The Market Value of Active and Inactive Member Reserves of \$3,078,603,158 was allocated for valuation purposes between the Closed Plan and the New Plan based on the aggregate Annuity Savings Account values in the valuation data.
- The Market Value of Retired Member Reserves of \$554,360,628 was allocated for valuation purposes between the Closed Plan and the New Plan based on the calculated retired member Annuity liabilities that this reserve supports. Currently, the allocated Reserve is less than the calculated Annuity liabilities in both plans.
- The Market Values of the Employer Reserve were used as reported.
- The Market Value of Assets as of June 30, 2003 was reported to be \$6,155,527,008. Using this figure, the *Funding Value of Assets* (based on the method implemented for the June 30, 2002 valuation) is \$6,554,364,927 (see page A-5). The difference between the Market Value of Assets and the Funding Value of Assets is the *Funding Value Adjustment*. This amount is allocated between the Closed Plan and the New Plan Reserves based on the respective Market Value of Assets for those Reserves. The derivation of the Non-Investment Net Cash Flow used in the development of the Funding Value of Assets is shown below. Further details can be found on page F-4.

### DEVELOPMENT OF NON-INVESTMENT NET CASH FLOW

#### Additions

Member Contributions	\$ 109,500,298
Employer Contributions	<u>605,065,732</u>
Total Contributions	\$ 714,566,030
Other Additions	<u>4,904,819</u>
<b>Total Additions</b>	<b>\$ 719,470,849</b>

#### Deductions

Benefit Payments	\$ 623,318,535
Other Deductions	<u>1,773,638</u>
<b>Total Deductions</b>	<b>\$ 625,092,173</b>

<b>Non-Investment Net Cash Flow</b>	<b>\$ 94,378,676</b>
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## DEVELOPMENT OF THE FUNDING VALUE OF ASSETS

Year Ended June 30:	2002	2003	2004	2005	2006
A. Funding Value Beginning of Year	\$5,810,759,564	\$6,176,574,529			
B. Market Value End of Year	5,722,753,180	6,155,527,008			
C. Market Value Beginning of Year	5,810,759,564	5,722,753,180			
D. Non-Investment Net Cash Flow	78,343,885	94,378,676			
E. Investment Return					
E1. Market Total: B - C - D	(166,350,269)	338,395,152			
E2. Amount for Immediate Recognition (7.5%)	438,744,863	466,782,290			
E3. Amount for Phased-In Recognition: E1-E2	(605,095,132)	(128,387,138)			
F. Phased-In Recognition of Investment Gain/(loss)					
F1. Current Year: 0.25 x E3	\$ (151,273,783)	\$ (32,096,785)			
F2. First Prior Year	-	(151,273,783)	\$ (32,096,785)		
F3. Second Prior Year	-	-	(151,273,783)	\$ (32,096,785)	
F4. Third Prior Year	-	-	-	(151,273,783)	\$ (32,096,783)
F5. Total Recognized Investment Gain/(Loss)	\$ (151,273,783)	\$ (183,370,568)	\$ (183,370,568)	\$ (183,370,568)	\$ (32,096,783)
G. Total Return Amount Recognized this Year: E2 + F5	\$ 287,471,080	\$ 283,411,722			
H. Preliminary Funding Value End of Year: A + D + G	6,176,574,529	6,554,364,927			
H1. 120% of Market Value End of Year	6,867,303,816	7,386,632,410			
H2. 80% of Market Value End of Year	4,578,202,544	4,924,421,606			
H3. Funding Value End of Year: H, but not greater than H1, nor less than H2	\$ 6,176,574,529	\$ 6,554,364,927			
I. Difference between Market and Funding Value: B - H3	\$ (453,821,349)	\$ (398,837,919)	\$ (215,467,351)	\$ (32,096,783)	0

The Funding Value of Assets recognizes assumed investment income (line E2) fully each year. Differences between actual and assumed investment income (line E3) are phased in over a closed 4-year period. During periods when investment performance exceeds the assumed rate, Funding Value of Assets will tend to be less than market value. During periods when investment performance is less than the assumed rate, Funding Value of Assets will tend to be greater than market value. The Funding Value of Assets is unbiased with respect to Market Value. At any time it may be either greater or less than Market Value. If assumed rates are exactly realized for 3 consecutive years, it will become equal to Market Value.

**DEVELOPMENT OF ASSETS AND LIABILITIES**  
**JUNE 30, 2003**

**REPORTED ASSETS (MARKET VALUE BASIS)**

Reserve Allocation	Closed Plan	New Plan	Total
<b>Member Reserves:</b>			
Active and Inactive	\$2,720,265,115	\$358,338,043	\$3,078,603,158
Retired	544,162,740	10,197,888	554,360,628
Total Member Reserves	3,264,427,855	368,535,931	3,632,963,786
<b>Employer Reserves:</b>			
Active	0	393,736,681	393,736,681
Retired			
Pension Stabilization Fund	1,859,794,504	0	1,859,794,504
Other	255,744,130	13,287,907	269,032,037
Total	2,115,538,634	13,287,907	2,128,826,541
Total Employer Reserves	2,115,538,634	407,024,588	2,522,563,222
Total Reserves	<b>\$5,379,966,489</b>	<b>\$775,560,519</b>	<b>\$6,155,527,008</b>

**ACTUARIAL ACCRUED LIABILITY: COMPUTED AND UNFUNDED**

	Closed Plan	New Plan	Total
<b>Retired Members and Beneficiaries:</b>			
Computed accrued liability	\$ 4,832,820,938	\$107,684,111	\$ 4,940,505,049
Allocated assets (market value)	2,659,701,374	23,485,795	2,683,187,169
Funding Value adjustment	172,331,266	1,521,726	173,852,992
Unfunded Accrued Liability	2,000,788,298	82,676,590	2,083,464,888
<b>Active and Inactive Members:</b>			
Computed accrued liability	8,522,045,502	1,284,788,505	9,806,834,007
Allocated assets (market value)	2,720,265,115	752,074,724	3,472,339,839
Funding Value adjustment	176,255,400	48,729,527	224,984,927
Unfunded Accrued Liability	5,625,524,987	483,984,254	6,109,509,241
<b>ISTRF Total:</b>			
Computed accrued liability	13,354,866,440	1,392,472,616	14,747,339,056
Allocated assets (market value)	5,379,966,489	775,560,519	6,155,527,008
Funding Value adjustment	348,586,666	50,251,253	398,837,919
<b>Unfunded Accrued Liability</b>	<b>\$ 7,626,313,285</b>	<b>\$566,660,844</b>	<b>\$ 8,192,974,129</b>

**CLOSED PLAN BALANCE SHEET**  
**SUMMARY STATEMENT OF FUND RESOURCES AND OBLIGATIONS**  
**JUNE 30, 2003**

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**PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES**

	<u>Annuities</u>	<u>Pensions</u>	<u>Total</u>
A. Funding value of system assets			
1. Net assets from Fund financial statements	\$3,264,427,855	\$ 2,115,538,634	\$ 5,379,966,489
2. Funding value adjustment	211,513,589	137,073,077	348,586,666
3. Funding value of assets	3,475,941,444	2,252,611,711	5,728,553,155
B. Actuarial present value of expected future employer contributions			
1. For normal costs	0	1,280,639,569	1,280,639,569
2. For unfunded actuarial accrued liability	61,920,053	7,564,393,232	7,626,313,285
3. Total	61,920,053	8,845,032,801	8,906,952,854
C. Present value of expected future member contributions*	644,350,523	0	644,350,523
D. Total Present and Future Resources	\$4,182,212,020	\$11,097,644,512	\$15,279,856,532

**ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE  
BENEFIT PAYMENTS AND RESERVES**

	<u>Annuities</u>	<u>Pensions</u>	<u>Total</u>
A. To retired members and beneficiaries			
1. Annual benefits	\$ 641,340,982	\$ 4,191,479,956	\$ 4,832,820,938
2. Reserve	0	0	0
3. Totals	641,340,982	4,191,479,956	4,832,820,938
B. To vested terminated members	211,996,647	146,673,250	358,669,897
C. To present active members			
1. Allocated to service rendered prior to valuation date	2,684,523,868	5,478,851,737	8,163,375,605
2. Allocated to service likely to be rendered after valuation date*	644,350,523	1,280,639,569	1,924,990,092
3. Total	3,328,874,391	6,759,491,306	10,088,365,697
D. Total Actuarial Present Value of Expected Future Benefit Payments and Reserves	\$4,182,212,020	\$11,097,644,512	\$15,279,856,532

\* Based on 3% mandatory member contributions.

**NEW PLAN BALANCE SHEET**  
**SUMMARY STATEMENT OF FUND RESOURCES AND OBLIGATIONS**  
**JUNE 30, 2003**

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**PRESENT RESOURCES AND EXPECTED FUTURE RESOURCES**

	<b>Annuities</b>	<b>Pensions</b>	<b>Total</b>
A. Funding value of system assets			
1. Net assets from Fund financial statements	\$368,535,931	\$ 407,024,588	\$ 775,560,519
2. Funding value adjustment	23,878,719	26,372,534	50,251,253
3. Funding value of assets	392,414,650	433,397,122	825,811,772
B. Actuarial present value of expected future employer contributions			
1. For normal costs	0	1,003,544,712	1,003,544,712
2. For unfunded actuarial accrued liability	1,160,414	565,500,430	566,660,844
3. Total	1,160,414	1,569,045,142	1,570,205,556
C. Present value of expected future member contributions*	492,432,305	0	492,432,305
D. Total Present and Future Resources	\$886,007,369	\$2,002,442,264	\$2,888,449,633

**ACTUARIAL PRESENT VALUE OF EXPECTED FUTURE  
BENEFIT PAYMENTS AND RESERVES**

	<b>Annuities</b>	<b>Pensions</b>	<b>Total</b>
A. To retired members and beneficiaries			
1. Annual benefits	\$ 12,019,058	\$ 95,665,053	\$ 107,684,111
2. Reserve	0	0	0
3. Totals	12,019,058	95,665,053	107,684,111
B. To vested terminated members	39,364,721	15,342,227	54,706,948
C. To present active members			
1. Allocated to service rendered prior to valuation date	342,191,285	887,890,272	1,230,081,557
2. Allocated to service likely to be rendered after valuation date*	492,432,305	1,003,544,712	1,495,977,017
3. Total	834,623,590	1,891,434,984	2,726,058,574
D. Total Actuarial Present Value of Expected Future Benefit Payments	\$886,007,369	\$2,002,442,264	\$2,888,449,633

\* Based on 3% mandatory member contributions.

## **SECTION B**

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### **Historical Comparisons of Valuation Results and Data**

**COMPUTED EMPLOYER CONTRIBUTION RATES  
EXPRESSED AS PERCENTS OF PAYROLL  
HISTORICAL COMPARISON**

**CLOSED PLAN**

Valuation Date June 30	Normal Cost	Unfunded Actuarial Accrued Liability			Total Employer Rate
		Active and Inactive	Retired	Totals	
1967	4.10%	4.56%	1.77%	6.33%	10.43%
1969	4.20	4.61	1.90	6.51	10.71
1971	4.17	4.22	2.07	6.29	10.46
1975#	6.31	3.51	1.38	4.89	11.20
1977	6.86	4.07	1.71	5.78	12.64
1979	6.75	4.20	1.81	6.01	12.76
1980	6.71	4.26	1.80	6.06	12.77
1981	6.75	4.02	1.72	5.74	12.49
1983#	6.50	2.46	1.15	3.61	10.11
1985	6.35	2.63	1.05	3.68	10.03
1987	6.35	2.70	1.02	3.72	10.07
1989#	7.59	3.16	0.96	4.12	11.71
1991	7.50	3.26	0.95	4.21	11.71
1992#	7.79	3.39	0.99	4.38	12.17
1993	7.79	3.37	1.01	4.38	12.17
1994	7.79	3.44	1.07	4.51	12.30
1995(a)	7.79	3.46	1.14	4.60	12.39
1995(b)	7.79	6.73	2.22	8.95	16.74
1996(b)	7.79	6.83	2.34	9.17	16.96
1997#(b)	7.44	7.07	2.26	9.33	16.77
1998(b)	7.42	7.41	2.27	9.68	17.10
1999(b)	7.42	7.76	1.84	9.60	17.02
2000	7.39	8.21	1.95	10.16	17.55
2001	7.32	8.48	2.05	10.53	17.85
2002#	7.39	8.74	2.23	10.97	18.36
2003	7.39	8.90	2.92	11.82	19.21
2003#	5.99	9.68	3.64	13.32	19.31

(a) Based on interest-only financing of UAAL. Years prior to 1995 are also interest-only.

(b) Based on closed 40-year amortization of UAAL beginning with the 1999 valuation. Open 40-year amortization of UAAL was used for the 1995-1998 valuations. Previous years are based on interest-only financing.

# After amendments and/or revised actuarial assumptions and/or methods.

**COMPUTED EMPLOYER CONTRIBUTION RATES  
EXPRESSED AS PERCENTS OF PAYROLL  
HISTORICAL COMPARISON**

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**NEW PLAN**

<b>Valuation Date June 30</b>	<b>Normal Cost</b>	<b>Unfunded Actuarial Accrued Liability</b>			<b>Total Employer Rate</b>
		<b>Active and Inactive</b>	<b>Retired</b>	<b>Totals</b>	
1996(b)	7.66%	1.36%	0.00%	1.36%	9.02%
1997#(b)	7.61	1.51	0.00	1.51	9.12
1998(b)	7.61	1.46	0.00	1.46	9.07
1999(b)	7.58	1.70	0.00	1.70	9.28
2000	7.61	1.93	0.00	1.93	9.54
2001	7.46	1.86	0.00	1.86	9.32
2002#	7.53	1.97	0.00	1.97	9.50
2003	7.53	1.89	0.27	2.16	9.69
2003#	6.20	1.77	0.32	2.09	8.29

(b) Based on closed 40-year amortization of UAAL beginning with the 1999 valuation. Open 40-year amortization of UAAL was used for the 1996-1998 valuations.

# After amendments and/or revised actuarial assumptions and/or methods.

**HISTORICAL COMPARISON  
CLOSED PLAN  
ACTUARIAL ACCRUED LIABILITY - PERCENT FUNDED**

If the contributions to ISTRF are level in concept and soundly executed, the Fund will *pay all promised benefits when due -- the ultimate indicator of financial soundness.*

One short-term means of checking a fund's progress under its funding program is shown below. In this indicator, the fund's present assets (cash and investments) are compared with:

- 1) active member contributions on deposit;
- 2) liability for future benefits to present retired lives; and
- 3) liability for service already rendered by active members.

In a fund that has been following the discipline of level percent-of-payroll financing, the liability for active member contributions on deposit (Liability 1) and the liability for future benefits to present retired lives (Liability 2) will be fully covered by present assets (except in rare circumstances). In addition, the liability for service already rendered by active members (Liability 3) will be partially covered by the remainder of present assets. The State's past practice of contributing on a "pay-as-you-go" basis has resulted in Liability 2 being less than 100% funded in the Closed Plan.

June 30	<u>Computed Actuarial Accrued Liability</u>			Valuation Assets	Portion of Accrued Liability Covered by Assets		
	(1) Member Contr.	(2) Retired Members	(3) Present Members (Employer-Financed Portion)		(1)	(2)	(3)
	(\$ in Millions)						
1975#(a)	\$ 216	\$ 451	\$ 903	\$ 312	100%	21%	0%
1977#	265	634	1,246	375	100	17	-
1979#(a)	324	777	1,481	466	100	18	-
1980	373	838	1,632	539	100	18	-
1981	423	885	1,649	601	100	20	-
1983(a)	544	1,043	1,751	765	100	21	-
1985	713	1,198	2,112	1,073	100	30	-
1987	932	1,406	2,499	1,401	100	33	-
1989#	1,132	1,624	3,449	1,707	100	35	-
1991	1,373	1,853	3,956	2,161	100	43	-
1992(a)	1,521	2,059	4,369	2,376	100	42	-
1993	1,665	2,290	4,553	2,592	100	41	-
1994	1,812	2,483	4,792	2,808	100	40	-
1995	1,930	2,716	5,029	2,984	100	39	-
1996	2,070	2,968	5,245	3,242	100	39	-
1997(a)	2,188	3,234	5,447	3,678	100	46	-
1998	2,374	3,479	5,629	4,130	100	50	-
1999	2,500	3,659	6,014	4,731	100	61	-
2000	2,699	3,890	5,819	5,210	100	65	-
2001	2,669	4,121	5,905	5,363	100	65	-
2002(a)	2,754	4,412	6,332	5,555	100	63	-
2003	2,897	4,780	5,988	5,729	100	59	-
2003(a)	2,897	4,833	5,626	5,729	100	59	-

# Legislated plan amendments.

(a) Actuarial assumptions and/or methods revised.

**HISTORICAL COMPARISON  
NEW PLAN  
ACTUARIAL ACCRUED LIABILITY - PERCENT FUNDED**

---

June 30	Computed Actuarial Accrued Liability			Valuation Assets	Portion of Accrued Liability Covered by Assets		
	(1) Member Contr.	(2) Retired Members	(3) Present Members (Employer-Financed Portion) (\$ in Millions)		(1)	(2)	(3)
1996	\$ 14	\$ 0	\$ 33	\$ 21	100%	100%	21%
1997(a)	46	0	130	72	100	100	20
1998	74	3	222	136	100	100	27
1999	126	4	369	240	100	100	30
2000	195	10	502	368	100	100	33
2001	211	12	605	447	100	100	37
2002(a)	291	17	858	621	100	100	36
2003	382	107	1,005	826	100	100	34
2003(a)*	382	108	903	826	100	100	37

(a) Actuarial assumptions and/or methods revised.

\* The calculation of the short condition test takes all of the assets, allocates them on a priority basis, regardless of the actual reserve balances. The priority basis is 1) Member Contributions; 2) Retired Member Liabilities; and 3) Active and Inactive Member Liabilities. This differs from the schedule on page 1 which determines the funded percentages based on the liabilities compared to the appropriate reserves.

The excess of accrued liability over valuation assets reflects the inclusion of new hires with prior service credit.

## CLOSED PLAN

### UNFUNDED ACTUARIAL ACCRUED LIABILITY

June 30	Computed Actuarial Accrued Liability*	Valuation Assets	Unfunded Actuarial Accrued Liability (UAAL)
1975#(a)	\$ 1,570	\$ 312	\$1,258
1977#	2,145	375	1,770
1979#(a)	2,582	466	2,116
1980	2,843	539	2,304
1981	2,957	601	2,356
1983(a)	3,338	765	2,573
1985	4,023	1,073	2,950
1987	4,837	1,401	3,436
1989#	6,205	1,707	4,498
1991	7,182	2,161	5,021
1992(a)	7,949	2,376	5,573
1993	8,508	2,592	5,916
1994	9,087	2,809	6,279
1995	9,675	2,984	6,691
1996	10,283	3,242	7,041
1997(a)	10,868	3,678	7,190
1998	11,481	4,130	7,351
1999	12,173	4,731	7,442
2000	12,409	5,210	7,199
2001	12,696	5,363	7,332
2002(a)	13,498	5,555	7,942
2003	13,665	5,729	7,936
2003(a)	13,355	5,729	7,626

## NEW PLAN

### UNFUNDED ACTUARIAL ACCRUED LIABILITY

June 30	Computed Actuarial Accrued Liability*	Valuation Assets	Unfunded Actuarial Accrued Liability (UAAL)
1996	\$ 48	\$ 21	\$ 27
1997(a)	176	72	104
1998	298	136	162
1999	498	240	258
2000	706	368	338
2001	828	447	381
2002(a)	1,167	621	546
2003	1,493	826	667
2003(a)	1,392	826	567

# Legislated plan amendments.

(a) Actuarial assumptions and/or methods revised.

\* Including annuity reserve.

The presence of unfunded actuarial accrued liability in the New Plan reflects the inclusion of transfers from the Closed Plan with prior service credit.

# RETIRED MEMBERS AND BENEFICIARIES MONTHLY ALLOWANCES AND RELATED LIABILITY HISTORICAL COMPARISON

## Closed Plan

Valuation June 30	Monthly Allowances Being Paid				Computed Liability		Reserves	Ratio of
	Number	Annuities	Pensions	Avg. Total Allowances	Annuities #	Pensions	Available for Retired Members	Reserves to Liability
1976*	19,961	\$ 713,332	\$ 4,949,716	\$ 284	\$ 90,519,552	\$ 430,998,792	\$ 103,417,581	19.8 %
1977	20,670	767,214	5,419,783	299	81,192,972	553,129,812	109,541,561	17.3
1978	21,312	821,780	5,981,203	319	87,002,688	608,034,852	122,903,169	17.7
1979	21,808	875,217	6,478,769	337	92,554,872	684,265,584	138,791,199	17.9
1980	22,255	933,253	7,609,102	384	98,744,304	739,477,692	152,227,411	18.2
1981	22,738	1,003,764	7,891,508	391	106,525,692	778,993,680	178,126,912	20.1
1982	23,261	1,086,088	8,656,992	419	109,389,360	853,368,564	210,986,498	21.9
1983*	23,631	1,167,337	9,576,598	455	121,488,456	921,241,128	220,447,081	21.1
1984	24,042	1,270,621	10,152,389	475	132,872,688	969,470,076	267,364,320	24.3
1985	24,496	1,412,942	10,989,033	506	149,309,064	1,049,064,600	360,036,868	30.0
1986	24,954	1,580,585	11,848,715	538	168,855,576	1,127,083,092	423,496,495	32.7
1987	25,492	1,771,901	12,705,712	568	191,274,096	1,214,737,224	468,533,788	33.3
1988	25,849	1,954,326	13,521,271	599	212,323,404	1,295,323,680	525,277,956	34.8
1989	26,173	2,158,461	14,387,419	632	235,879,716	1,387,778,748	575,176,619	35.4
1990	26,664	2,448,268	15,649,770	679	270,612,204	1,521,301,656	664,922,515	37.1
1991	27,177	2,729,359	15,498,308	671	300,739,500	1,552,581,216	787,869,959	42.5
1992*	27,759	3,006,489	16,441,198	701	341,941,104	1,717,495,500	855,640,166	41.5
1993	28,194	3,439,687	17,180,701	731	469,421,977	1,820,905,044	927,804,051	41.0
1994	28,677	3,695,040	18,563,890	776	499,429,500	1,983,402,204	996,033,842	40.1
1995	29,364	3,955,212	20,228,163	824	534,973,912	2,181,300,588	1,054,045,397	38.8
1996	30,120	4,212,455	22,081,911	873	564,310,332	2,404,081,944	1,172,253,144	39.5
1997*	30,657	4,432,010	23,949,443	926	590,012,474	2,643,637,512	1,490,448,302	46.1
1998	31,307	4,650,748	25,867,893	975	607,908,268	2,870,838,240	1,756,324,911	50.5
1999(a)	32,018	4,843,545	27,524,587	1,011	625,058,387	3,034,060,036	2,231,076,672	61.0
2000	32,818	5,057,926	30,285,194	1,077	648,366,105	3,242,529,456	2,510,470,810	64.5
2001	33,698	5,231,219	32,544,302	1,121	618,238,221	3,503,121,001	2,694,552,158	65.4
2002(b)*	34,646	5,444,155	34,613,345	1,156	610,673,717	3,801,054,120	2,801,796,282	63.5
2003(b)	35,627	5,639,861	37,411,550	1,208	633,635,295	4,146,256,538	2,832,003,326	59.2
2003(b)*	35,627	5,639,861	37,411,550	1,208	641,340,982	4,191,479,956	2,832,032,640	58.6

\* Revised assumptions and/or methods.

# Includes annuity reserve.

(a) The data did not include the COLA effective 7/1/99. An adjustment was made to the pension liability and projected pension payouts for valuation purposes.

(b) Liability calculations include COLA effective the following January.

**RETIRED MEMBERS AND BENEFICIARIES MONTHLY ALLOWANCES AND RELATED LIABILITY  
HISTORICAL COMPARISON**

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**New Plan**

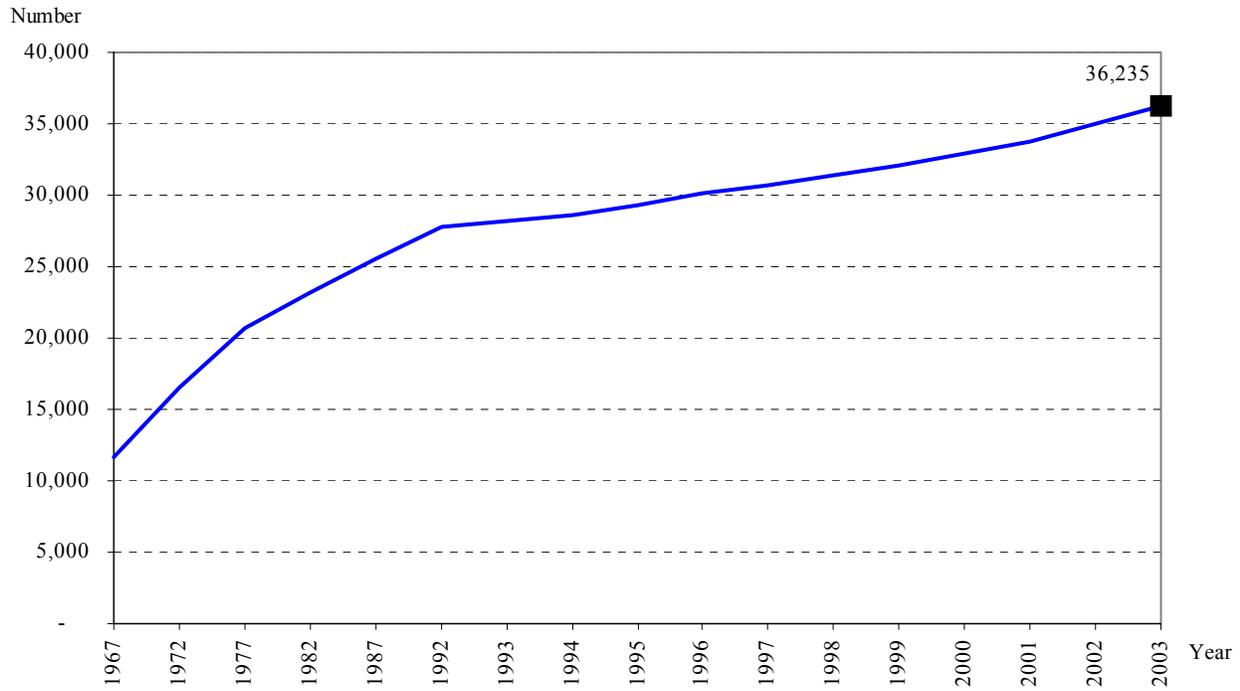
Valuation June 30	Monthly Allowances Being Paid				Computed Liability		Reserves Available for Retired Members	Ratio of Reserves to Liability
	Number	Annuities	Pensions	Avg. Total Allowances	Annuities #	Pensions		
1996	1	\$ 334	\$ 1,727	\$2,061	\$ 55,108	\$ 248,376	\$ 303,484	100.0%
1997*	1	334	1,762	2,096	133,846	252,564	386,410	100.0
1998	18	2,257	16,494	1,042	431,846	2,219,496	2,703,524	100.0
1999	30	3,311	28,760	1,069	498,774	3,404,460	3,903,234	100.0
2000	60	7,460	62,532	1,167	1,126,062	7,553,052	8,679,114	100.0
2001	85	8,169	90,677	1,163	1,138,375	10,942,426	13,070,250	108.2
2002(a)*	108	13,328	125,194	1,283	1,771,082	15,567,573	17,656,813	101.8
2003(a)	608	93,526	777,095	1,432	11,907,309	94,761,745	25,036,836	23.5
2003(a)*	608	93,526	777,095	1,432	12,019,058	95,665,053	25,007,521	23.2

\* Revised assumptions and/or methods.

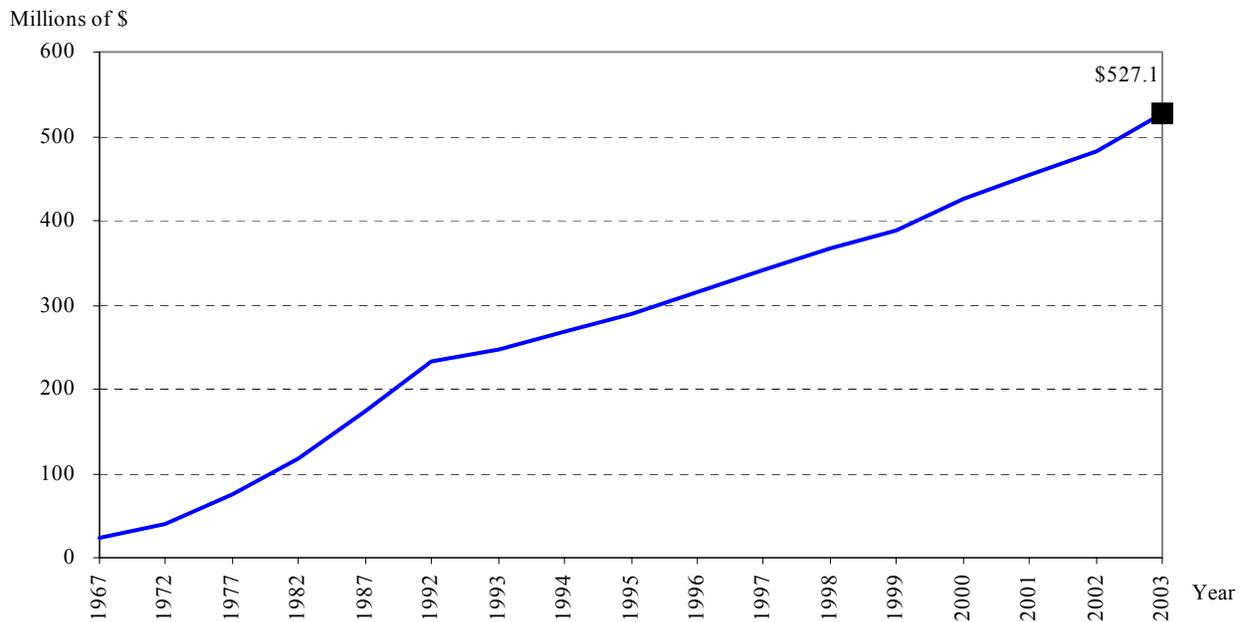
# Includes annuity reserve.

(a) Liability calculations include COLA effective the following January.

## RETIRED MEMBERS AND BENEFICIARIES RECEIVING BENEFITS



## TOTAL ANNUAL RETIREMENT ALLOWANCES BEING PAID



## ACTIVE MEMBER DATA HISTORICAL COMPARISON

<b>Closed Plan</b>						
Valuation Date June 30	No. of Active Members	Valuation Payroll (+000)	Averages			Annual Increase
			Age	Service	Salary	
1975	63,932	\$ 749,200	38.7 yrs.	10.9 yrs.	\$ 11,719	
1977	65,573	891,780	39.0	11.2	13,600	7.7%
1979	66,523	1,024,888	39.4	11.5	15,406	6.4
1980	66,575	1,107,699	39.7	11.9	16,638	8.0
1981	65,283	1,194,856	40.0	12.2	18,303	10.0
1983	64,280	1,350,061	41.1	13.3	21,003	7.1
1985	62,932	1,519,887	41.5	14.2	24,151	7.2
1987	64,157	1,751,709	42.0	14.5	27,303	6.3
1989	65,986	2,044,797	42.6	14.9	30,988	6.5
1991	63,373	2,278,715	43.0	15.4	35,957	7.7
1992	63,980	2,416,263	43.8	16.0	37,766	5.0
1993	64,594	2,536,165	44.0	16.1	39,263	4.0
1994	65,209	2,614,915	44.1	16.2	40,101	2.1
1995	66,542	2,728,811	44.2	16.2	41,009	2.3
1996	70,183	2,805,823	44.2	15.7	39,979	(2.5)
1997	63,520	2,739,436	45.4	16.9	43,127	7.9
1998	59,030	2,699,183	46.4	18.0	45,726	6.0
1999	56,560	2,755,489	47.4	19.3	48,718	6.5
2000	52,920	2,561,533	48.2	20.1	48,404	(0.6)
2001	50,802	2,564,451	48.7	20.7	50,479	4.3
2002	47,510	2,604,956	49.4	21.5	54,830	8.6
2003	43,705	2,448,271	49.6	21.7	56,018	2.2

<b>New Plan</b>						
Valuation Date June 30	No. of Active Members	Valuation Payroll (+000)	Averages			Annual Increase
			Age	Service	Salary	
1996	8,683	\$ 72,506	32.2 yrs.	1.3 yrs.	\$ 8,350	
1997	20,686	245,168	33.0	1.8	11,852	41.9%
1998	25,634	395,758	33.6	2.2	15,439	30.3
1999	21,185*	538,837	35.3	4.0	25,435	64.7
2000	24,950	631,072	36.4	4.7	25,293	(0.6)
2001	24,846	754,426	36.3	5.5	30,364	20.0
2002	27,873	1,004,515	36.7	6.1	36,039	18.7
2003	29,936	1,136,864	37.0	6.5	37,976	5.4

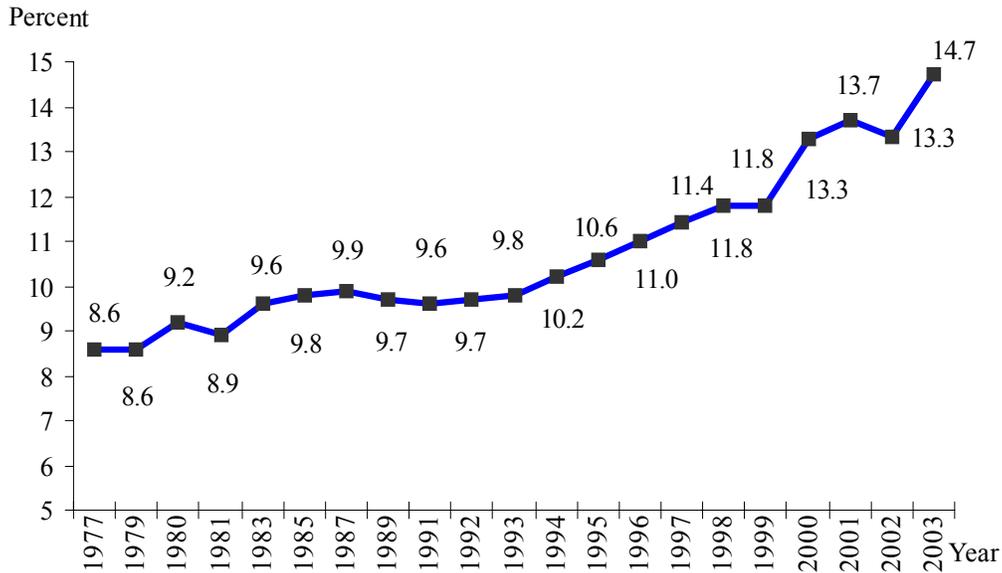
\* Excludes non-degreed substitute teachers (who had previously been included in the data but who do not participate in the Fund).

# TRF COMPARATIVE STATISTICAL RATIOS

## ACTIVE MEMBERS PER RETIRED LIFE



## ANNUAL RETIREMENT ALLOWANCES AS A PERCENT OF VALUATION PAYROLL



# **SECTION C**

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## **Population Projections**

## CLOSED GROUP ACTUARIAL PROJECTIONS

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The schedules on the following pages were produced by means of an actuarial projection.

Whereas actuarial valuations provide a snapshot of the Retirement Fund as of a given date, actuarial projections provide a moving picture of Retirement Fund activities. The projected active and retired groups are developed from year to year by applying assumptions regarding pre-retirement withdrawal from service, retirements, deaths, and disabilities. Projected information regarding plan activity produces an expected future benefit payout stream.

Projection results are useful in demonstrating changing relationships among key elements affecting system financial activity. For example: how benefits payable and assets will grow in future decades. **Projections are not predictions of specific future events and do not provide numeric precision in absolute terms.** For instance, benefits projected to occur 10 years in the future will not be exact (except by coincidence), but understanding the changed relationships over a period of years can be very useful.

The closed group New Plan projection is provided in the section for completeness. The New Plan membership will, in fact, grow in size, as members of the Closed Plan leave active status and are replaced by New Plan participants.

**CLOSED PLAN**  
**ACTIVE AND RETIRED MEMBER CLOSED GROUP PROJECTION**  
**BASED ON JUNE 30, 2003 VALUATION DATA AND ASSUMPTIONS**  
**(\$ IN MILLIONS)**

Year	Active Members		Retired Members	
	Number	Payroll	Number	State-Financed
				Payroll
2003	43,705	\$ 2,448.3	35,627	\$ 448.9
2004	41,328	2,445.9	37,191	479.5
2005	39,022	2,435.6	38,269	508.9
2006	36,677	2,410.9	39,427	536.4
2007	34,280	2,370.5	40,674	569.7
2008	31,839	2,314.1	42,010	608.1
2009	29,372	2,242.4	43,395	649.1
2010	26,919	2,157.0	44,780	694.9
2011	24,524	2,061.6	46,079	744.0
2012	22,209	1,957.1	47,323	794.9
2013	19,985	1,844.5	48,495	847.0
2014	17,908	1,729.7	49,522	897.8
2015	15,972	1,613.5	50,362	946.9
2016	14,179	1,497.4	51,013	993.3
2017	12,523	1,381.7	51,502	1,037.2
2018	11,011	1,268.8	51,791	1,077.4
2019	9,645	1,160.4	51,843	1,112.9
2020	8,417	1,057.1	51,727	1,143.9
2021	7,320	959.5	51,419	1,170.4
2022	6,340	867.1	50,957	1,192.3
2023	5,470	780.6	50,327	1,208.9
2024	4,693	698.7	49,542	1,221.0
2025	3,994	620.5	48,616	1,228.7
2026	3,371	546.3	47,571	1,232.1
2027	2,812	475.5	46,422	1,231.8
2028	2,329	410.7	45,176	1,226.8
2029	1,913	351.9	43,807	1,217.1
2030	1,554	298.2	42,359	1,203.4
2031	1,252	250.5	40,795	1,185.0
2032	993	207.1	39,149	1,162.5

Note: Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

**CLOSED PLAN**  
**ACTIVE AND RETIRED MEMBER CLOSED GROUP PROJECTION**  
**BASED ON JUNE 30, 2003 VALUATION DATA AND ASSUMPTIONS**  
**(\$ IN MILLIONS)**

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- CONTINUED -

Year	Active Members		Retired Members	
	Number	Payroll	Number	State Financed
				Payroll
2033	778	\$ 169.1	37,427	\$ 1,135.6
2034	600	135.8	35,651	1,104.9
2035	453	106.8	33,853	1,070.8
2036	339	83.1	32,026	1,033.3
2037	248	63.4	30,174	993.1
2038	180	47.8	28,302	950.3
2039	128	35.4	26,438	905.6
2040	87	25.0	24,605	859.7
2041	58	17.2	22,809	812.7
2042	37	11.3	21,068	765.1
2043	24	7.6	19,387	717.2
2044	16	5.3	17,775	669.6
2045	11	3.6	16,235	622.8
2046	7	2.4	14,773	577.1
2047	4	1.4	13,394	532.9
2048	2	0.8	12,101	490.2
2049	1	0.3	10,893	449.3
2050	0	0.1	9,771	410.2
2051	0	0.0	8,732	373.0
2052	-	-	7,775	337.9

Note: Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

**NEW PLAN**  
**ACTIVE AND RETIRED MEMBER CLOSED GROUP PROJECTION**  
**BASED ON JUNE 30, 2003 VALUATION DATA AND ASSUMPTIONS**  
**(\$ IN MILLIONS)**

Year	Active Members		Retired Members	
	Number	Payroll	Number	State-Financed
				Payroll
2003	29,936	\$ 1,136.9	608	\$ 9.3
2004	27,068	1,139.5	713	10.8
2005	25,101	1,154.2	828	12.7
2006	23,562	1,176.2	956	14.9
2007	22,296	1,202.5	1,123	17.8
2008	21,212	1,231.7	1,324	21.3
2009	20,257	1,262.3	1,571	25.5
2010	19,381	1,292.4	1,858	30.8
2011	18,560	1,321.3	2,189	36.9
2012	17,764	1,347.8	2,583	44.2
2013	16,988	1,371.6	3,039	52.7
2014	16,232	1,392.8	3,537	62.4
2015	15,490	1,410.1	4,051	73.1
2016	14,767	1,424.3	4,576	84.8
2017	14,052	1,434.2	5,120	97.5
2018	13,350	1,440.1	5,662	111.0
2019	12,679	1,443.3	6,174	124.8
2020	12,029	1,441.9	6,685	139.6
2021	11,410	1,437.3	7,168	154.9
2022	10,812	1,429.1	7,632	170.8
2023	10,231	1,417.2	8,091	187.8
2024	9,664	1,401.6	8,543	205.9
2025	9,105	1,381.7	8,985	225.3
2026	8,541	1,355.5	9,437	246.9
2027	7,960	1,320.9	9,913	271.3
2028	7,361	1,276.8	10,408	298.9
2029	6,745	1,222.4	10,929	329.9
2030	6,115	1,157.6	11,472	364.3
2031	5,478	1,082.6	12,023	402.0
2032	4,838	997.9	12,587	442.4

Note: Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

**NEW PLAN**  
**ACTIVE AND RETIRED MEMBER CLOSED GROUP PROJECTION**  
**BASED ON JUNE 30, 2003 VALUATION DATA AND ASSUMPTIONS**  
**(\$ IN MILLIONS)**

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- CONTINUED -

Year	Active Members		Retired Members	
	Number	Payroll	Number	State Financed
				Payroll
2033	4,205	\$ 905.2	13,158	\$ 485.2
2034	3,596	807.6	13,703	528.9
2035	3,023	708.5	14,213	572.2
2036	2,503	612.4	14,662	613.1
2037	2,043	521.6	15,043	650.7
2038	1,639	436.6	15,338	684.2
2039	1,291	358.6	15,534	712.6
2040	996	288.3	15,614	735.3
2041	751	226.3	15,568	751.8
2042	553	173.2	15,447	762.5
2043	393	128.1	15,246	768.0
2044	271	91.6	14,962	768.1
2045	180	62.9	14,596	763.1
2046	114	41.4	14,138	753.2
2047	69	25.6	13,637	739.2
2048	36	13.5	13,113	722.1
2049	16	5.6	12,570	702.0
2050	4	1.4	12,011	679.2
2051	0	0.0	11,441	654.0
2052	0	0.0	10,863	627.4

Note: Projections are intended to demonstrate the pattern of future activities and should not be viewed as a prediction of specific dollar amounts in any year.

## **SECTION D**

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### **Summary of Benefit Provisions**

## SUMMARY OF BENEFIT PROVISIONS (SUMMARY UPDATED TO JUNE 30, 2003)

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### REGULAR RETIREMENT (NO REDUCTION FACTOR FOR AGE)

**Eligibility** - Age 65 with 10 years service or age 60 with 15 or more years of service or if age is at least 55 and the sum of age plus credited service is 85 or more.

**Mandatory Retirement Age** - None.

**Annual Amount** - State pension equal to total service times 1.1% of Average Annual Compensation.

**Type of Final Average Salary** - Average of highest 5 years of compensation. Years do not need to be continuous.

### EARLY RETIREMENT (AGE REDUCTION FACTOR USED)

**Eligibility** - Age 50 with 15 or more years of service.

**Annual Amount** - State pension is computed as regular retirement benefit, but reduced for each month between age at early retirement and attainment of age 65. The age reduction factor is calculated as follows:

- 1/10 of 1% for all months from age 60 to 65.
- 5/12 of 1% for months from age at early retirement to 60.

### DEFERRED RETIREMENT (VESTED BENEFIT)

**Eligibility** - 10 years of service. Benefit commences at regular or early retirement eligibility.

**Annual Amount** - Computed as a regular retirement benefit with state pension based on service and Average Annual Compensation at termination.

### DISABILITY RETIREMENT

#### Classroom disability benefit:

**Eligibility** - 5 years of service.

**Annual Amount** - \$125 per month plus \$5 per month for each year of service credit over 5 years.

#### Alternative disability benefit:

**Eligibility** - 5 years of service and determined to be disabled by the Social Security Administration. Annual verification of Social Security disability is required.

**Annual Amount** - Computed as a regular retirement benefit using creditable service to the date of disability and without reduction for early retirement. The minimum benefit is \$100 per month.

## SUMMARY OF BENEFIT PROVISIONS (CONTINUED) (SUMMARY UPDATED TO JUNE 30, 2003)

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### DEATH BEFORE RETIREMENT

**Eligibility** - 15 years of service. Spouse to whom member had been married for 2 or more years is automatically eligible, or a dependent may be designated as beneficiary.

**Annual Amount** - Computed as regular retirement benefit but reduced in accordance with a 100% joint and survivor election.

### BENEFIT INCREASES AFTER RETIREMENT

No automatic increases after retirement are provided. Periodically, unscheduled increases have been made.

### MEMBER CONTRIBUTIONS

All Fund members are required by state law to contribute 3% of salary contributions to their Annuity Savings Account. These 3% contributions are “picked up” by the employer and contributed on a pre-tax basis on behalf of the employee. Extra voluntary contributions by the member are also possible but on a post-tax basis. At retirement, there are six alternatives for receiving the proceeds of this account including lump sums, full and partial rollovers, full and partial annuitization of the balance and deferred distribution.

### FORMS OF BENEFIT PAYMENT (STATE PENSION)

The normal form of benefit payment (**Option A-1**) is a single life annuity with a 5-year certain period. There are 5 optional forms of payment available as listed below. Additionally, members retiring between ages 50 and 62 may integrate their pension benefit with their Social Security benefit by choosing Social Security Integration (**Option A-4**) in conjunction with the normal form or any other optional form selected. Optional forms of payment are calculated on an actuarial equivalent basis.

**Option A-2:** Straight Life benefit with no certain period.

**Option A-3:** Modified Cash Refund Annuity (operates in conjunction with the Annuity Savings Account).

**Option B-1:** 100% Survivorship.

**Option B-2:** 66 2/3% Survivorship.

**Option B-3:** 50% Survivorship

State law provides for actuarially adjusted and recalculated benefits based on a new optional form election in the event of the death of the member’s spouse after retirement. (IC 5-10.2-4-7)

## BENEFIT CHANGES DURING RECENT YEARS OF RETIREMENT AND RELATED CHANGES IN PURCHASING POWER

Retiring During Year Ending	March 31 CPI	Value of \$100		Value of \$100
		in 2003 Before Accumulated Increases	Accumulated Increases	
6/30/1955	26.9	\$ 14.92	283.66%	\$ 57.24
6/30/1959	29.1	16.14	254.66	57.24
6/30/1960	29.5	16.36	249.85	57.24
6/30/1961	30.0	16.64	244.02	57.24
6/30/1962	30.3	16.81	240.61	57.24
6/30/1963	30.7	17.03	236.17	57.24
6/30/1964	31.1	17.25	231.85	57.24
6/30/1965	31.5	17.47	227.63	57.24
6/30/1966	32.3	17.91	219.52	57.24
6/30/1967	33.2	18.41	210.86	57.24
6/30/1968	34.5	19.13	199.14	57.24
6/30/1969	36.3	20.13	184.31	57.24
6/30/1970	38.4	21.30	168.76	57.24
6/30/1971	40.2	22.30	156.73	57.24
6/30/1972	41.6	23.07	148.09	57.24
6/30/1973	43.6	24.18	136.71	57.24
6/30/1974	48.0	26.62	117.66	57.95
6/30/1975	53.0	29.40	115.59	63.37
6/30/1976	56.2	31.17	101.37	62.77
6/30/1977	59.8	33.17	95.58	64.87
6/30/1978	63.7	35.33	88.04	66.43
6/30/1979	70.3	38.99	80.79	70.49
6/30/1980	80.5	44.65	72.17	76.87
6/30/1981	89.0	49.36	54.70	76.37
6/30/1982	94.8	52.58	44.13	75.78
6/30/1983	98.4	54.58	39.93	76.37
6/30/1984	101.8	56.46	35.90	76.73
6/30/1985	105.9	58.74	30.66	76.74
6/30/1986	107.9	59.84	26.83	75.90
6/30/1987	111.0	61.56	25.57	77.31
6/30/1988	115.1	63.84	20.72	77.06
6/30/1989	120.8	67.00	18.35	79.30
6/30/1990	127.1	70.49	18.35	83.43
6/30/1991	133.0	73.77	16.33	85.81
6/30/1992	137.0	75.98	16.33	88.39
6/30/1993	141.1	78.26	15.18	90.14
6/30/1994	144.4	80.09	11.80	89.54
6/30/1995	148.7	82.47	11.80	92.20
6/30/1996	152.9	84.80	7.19	90.90
6/30/1997	157.0	87.08	3.03	89.72
6/30/1998	158.7	88.02	3.03	90.69
6/30/1999	161.4	89.52	3.03	92.23
6/30/2000	167.9	93.12	2.01	94.99
6/30/2001	172.6	95.73	1.00	96.69
6/30/2002	174.7	96.89	0.00	96.89
6/30/2003	180.3	100.00	0.00	100.00

# **SECTION E**

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## **Details of Valuation Data**

**CLOSED PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**MONTHLY BENEFIT AMOUNTS BY TYPE OF BENEFIT BEING PAID**

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Type of Benefit	Number	Monthly Amounts Being Paid		
		Annuities	Pensions	Total
<b>Age and Service</b>				
Option A-1 - 5 YR. CERT.				
(Regular)	7,972	\$ 1,080,874	\$ 7,695,346	\$ 8,776,220
(With Opt. A-4)	619	67,546	1,203,557	1,271,103
(S.S. After 65)	2,558	309,838	1,680,794	1,990,632
Option A-2 - S.L.				
(Regular)	4,416	725,626	4,683,885	5,409,511
(With Opt. A-4)	328	45,211	650,129	695,340
(S.S. After 65)	891	137,969	735,924	873,893
Option A-3 - CRA				
(Regular)	898	233,118	921,163	1,154,281
(With Opt. A-4)	68	28,943	125,116	154,059
(S.S. After 65)	345	71,694	254,234	325,928
Option B-1 - 100%JS				
(Regular)	7,188	1,274,402	8,355,325	9,629,727
(With Opt. A-4)	432	65,237	822,735	887,972
(S.S. After 65)	1,574	270,334	1,491,378	1,761,712
Option B-2 - 67%JS				
(Regular)	2,352	448,943	2,813,476	3,262,419
(With Opt. A-4)	110	17,319	222,833	240,152
(S.S. After 65)	645	123,693	637,162	760,855
Option B-3 - 50%JS				
(Regular)	2,526	444,012	2,862,388	3,306,400
(With Opt. A-4)	177	26,985	358,394	385,379
(S.S. After 65)	790	134,440	746,920	881,360
Survivor Beneficiary				
(Regular)	1	-	1,428	1,428
(With Opt. A-4)	-	-	-	-
(S.S. After 65)	-	-	-	-
<b>Age and Service Totals</b>	<b>33,890</b>	<b>\$ 5,506,184</b>	<b>\$36,262,187</b>	<b>\$41,768,371</b>

**CLOSED PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**MONTHLY BENEFIT AMOUNTS BY TYPE OF BENEFIT BEING PAID**  
**(Continued)**

Type of Benefit	Number	Monthly Amounts Being Paid		
		Annuities	Pensions	Total
<b>Duty Disability (Classroom)</b>	67	-	\$ 22,874	\$ 22,874
<b>Duty Disability Totals</b>	<b>67</b>	<b>-</b>	<b>22,874</b>	<b>22,874</b>
<b>Non-Duty Disability (Regular)</b>				
Option A-1 - 5 YR. CERT.	125	\$ 13,378	\$ 122,661	\$ 136,039
Option A-2 - S.L.	64	7,781	55,018	62,799
Option A-3 - CRA	21	4,842	19,240	24,082
Option B-1 - 100%JS	213	23,882	185,426	209,308
Option B-2 - 67%JS	16	3,285	16,818	20,103
Option B-3 - 50%JS	27	3,648	23,290	26,938
<b>Non-Duty Disability Totals</b>	<b>466</b>	<b>\$ 56,816</b>	<b>\$ 422,453</b>	<b>\$ 479,269</b>
<b>Non-Duty Death (Regular)</b>				
Spouse	1,204	76,861	704,036	780,897
<b>Non-Duty Death Totals</b>	<b>1,204</b>	<b>76,861</b>	<b>704,036</b>	<b>780,897</b>
<b>Casualty Totals</b>	<b>1,737</b>	<b>133,677</b>	<b>1,149,363</b>	<b>1,283,040</b>
<b>Total Allowances Being Paid</b>	<b>35,627</b>	<b>\$ 5,639,861</b>	<b>\$37,411,550</b>	<b>\$43,051,411</b>

**NEW PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**MONTHLY BENEFIT AMOUNTS BY TYPE OF BENEFIT BEING PAID**

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Type of Benefit	Number	Monthly Amounts Being Paid		
		Annuities	Pensions	Total
<b>Age and Service</b>				
Option A-1 - 5 YR. CERT.				
(Regular)	117	\$ 17,738	\$ 136,603	\$ 154,341
(With Opt. A-4)	33	2,040	62,503	64,543
(S.S. After 65)	27	4,585	28,221	32,806
Option A-2 - S.L.				
(Regular)	80	16,455	99,507	115,962
(With Opt. A-4)	10	468	18,343	18,811
(S.S. After 65)	7	2,468	8,175	10,643
Option A-3 - CRA				
(Regular)	21	5,900	19,149	25,049
(With Opt. A-4)	2	662	4,406	5,068
(S.S. After 65)	8	2,858	9,167	12,025
Option B-1 - 100%JS				
(Regular)	133	20,532	161,332	181,864
(With Opt. A-4)	17	2,372	31,300	33,672
(S.S. After 65)	30	2,105	42,528	44,633
Option B-2 - 67%JS				
(Regular)	36	3,497	48,542	52,039
(With Opt. A-4)	4	-	9,373	9,373
(S.S. After 65)	3	562	2,854	3,416
Option B-3 - 50%JS				
(Regular)	42	6,190	60,867	67,057
(With Opt. A-4)	5	2,643	11,763	14,406
(S.S. After 65)	6	283	7,812	8,095
<b>Age and Service Totals</b>	<b>581</b>	<b>\$ 91,358</b>	<b>\$ 762,445</b>	<b>\$ 853,803</b>

**NEW PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**MONTHLY BENEFIT AMOUNTS BY TYPE OF BENEFIT BEING PAID**

---

Type of Benefit	Number	Monthly Amounts Being Paid		
		Annuities	Pensions	Total
Duty Disability (Classroom)	<u>1</u>	<u>\$ -</u>	<u>\$ 189</u>	<u>\$ 189</u>
<b>Duty Disability Totals</b>	<b>1</b>	<b>-</b>	<b>189</b>	<b>189</b>
<b>Non-Duty Disability (Regular)</b>				
Option A-1 - 5 YR. CERT.	3	\$ 32	\$ 802	\$ 834
Option A-2 - S.L.	1	-	634	634
Option A-3 - CRA	2	173	616	789
Option B-1 - 100%JS	8	1,065	4,801	5,866
Option B-3 - 50%JS	<u>1</u>	<u>227</u>	<u>880</u>	<u>1,107</u>
<b>Non-Duty Disability Totals</b>	<b>15</b>	<b>\$ 1,497</b>	<b>\$ 7,733</b>	<b>\$ 9,230</b>
<b>Non-Duty Death (Regular)</b>				
Spouse	<u>11</u>	<u>671</u>	<u>6,728</u>	<u>7,399</u>
<b>Non-Duty Death Totals</b>	<b><u>11</u></b>	<b><u>671</u></b>	<b><u>6,728</u></b>	<b><u>7,399</u></b>
<b>Casualty Totals</b>	<b><u>27</u></b>	<b><u>2,168</u></b>	<b><u>14,650</u></b>	<b><u>16,818</u></b>
<b>Total Allowances Being Paid</b>	<b><u>608</u></b>	<b><u>\$93,526</u></b>	<b><u>\$777,095</u></b>	<b><u>\$870,621</u></b>

**CLOSED PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**TABULATED BY YEAR OF RETIREMENT**

Year of Retirement	Number	Monthly Pensions	
		Total	Average
Before 1950	14	\$ 10,120	\$ 723
1950-1959	58	31,672	546
1960	18	6,262	348
1961	17	6,266	369
1962	29	8,427	291
1963	27	9,182	340
1964	47	19,004	404
1965	50	16,861	337
1966	60	21,119	352
1967	80	27,906	349
1968	109	46,257	424
1969	141	65,222	463
1970	179	86,161	481
1971	244	122,470	502
1972	279	148,445	532
1973	381	218,690	574
1974	413	225,722	547
1975	385	216,040	561
1976	438	252,989	578
1977	507	304,332	600
1978	546	332,962	610
1979	637	392,344	616
1980	680	412,661	607
1981	685	420,941	615
1982	659	410,457	623
1983	731	454,392	622
1984	788	498,257	632
1985	1,117	756,780	678
1986	898	623,259	694
1987	1,035	763,972	738
1988	1,133	889,596	785
1989	895	734,785	821
1990	1,382	1,281,593	927
1991	1,323	1,317,068	996
1992	1,180	1,211,397	1,027
1993	1,232	1,368,298	1,111
1994	1,368	1,543,528	1,128
1995	1,691	1,989,099	1,176
1996	1,677	2,033,275	1,212
1997	1,457	1,778,579	1,221
1998	1,807	2,323,233	1,286
1999	1,650	2,270,088	1,376
2000	1,926	2,794,090	1,451
2001	1,921	2,982,055	1,552
2002	2,190	3,467,057	1,583
2003	1,543	2,518,637	1,632
<b>TOTALS</b>	<b>35,627</b>	<b>\$37,411,550</b>	<b>\$1,050</b>

**NEW PLAN**  
**RETIRED MEMBERS AND BENEFICIARIES JUNE 30, 2003**  
**TABULATED BY YEAR OF RETIREMENT**

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Year of Retirement	Number	Monthly Pensions	
		Total	Average
1974	1	\$ 321	\$ 321
1975	1	250	250
1981	3	1,650	550
1982	1	831	831
1985	1	853	853
1986	2	1,387	693
1987	6	4,300	717
1988	6	4,312	719
1989	6	4,027	671
1990	9	6,624	736
1991	13	9,714	747
1992	10	10,103	1,010
1993	12	9,886	824
1994	12	12,663	1,055
1995	17	17,019	1,001
1996	25	26,583	1,063
1997	28	28,963	1,034
1998	40	43,667	1,092
1999	47	58,437	1,243
2000	60	72,833	1,214
2001	79	104,908	1,328
2002	101	155,352	1,538
2003	128	202,412	1,581
<b>TOTALS</b>	<b>608</b>	<b>\$777,095</b>	<b>\$1,278</b>

**CLOSED PLAN**  
**MONTHLY RETIREMENT ALLOWANCES BY ATTAINED AGE**  
**AS OF JUNE 30, 2003**

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Attained Ages	Men		Women		Totals	
	Number	Monthly Allowances	Number	Monthly Allowances	Number	Monthly Allowances
UNDER 20	-	-	-	-	-	-
20 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	1	\$ 511	1	\$ 321	2	\$ 832
40 - 44	3	1,517	14	4,868	17	6,385
45 - 49	16	9,665	43	18,743	59	28,408
50 - 54	108	72,433	244	153,122	352	225,555
55 - 59	1,340	2,343,569	1,891	3,046,740	3,231	5,390,309
60 - 64	2,543	4,289,355	3,526	4,973,283	6,069	9,262,638
65 - 69	2,733	4,281,139	3,516	4,387,892	6,249	8,669,031
70 - 74	2,691	3,856,271	3,314	3,667,574	6,005	7,523,845
75 - 79	2,267	2,739,593	2,800	2,501,042	5,067	5,240,635
80 - 84	1,418	1,378,473	2,223	1,688,157	3,641	3,066,630
85 - 89	832	727,580	1,904	1,297,580	2,736	2,025,160
90 - 94	430	357,063	1,046	724,125	1,476	1,081,188
95 - 99	186	142,128	400	292,230	586	434,358
Over 100	75	51,044	62	45,393	137	96,437
<b>Totals</b>	<b>14,643</b>	<b>\$20,250,341</b>	<b>20,984</b>	<b>\$22,801,070</b>	<b>35,627</b>	<b>\$43,051,411</b>

**NEW PLAN**  
**MONTHLY RETIREMENT ALLOWANCES BY ATTAINED AGE**  
**AS OF JUNE 30, 2003**

---

Attained Ages	Men		Women		Totals	
	Number	Monthly Allowances	Number	Monthly Allowances	Number	Monthly Allowances
UNDER 20	-	-	-	-	-	-
20 - 24	-	-	-	-	-	-
25 - 29	-	-	-	-	-	-
30 - 34	-	-	-	-	-	-
35 - 39	-	-	-	-	-	-
40 - 44	1	\$ 330	2	\$ 891	3	\$ 1,221
45 - 49	5	2,253	-	-	5	2,253
50 - 54	6	4,033	16	9,360	22	13,393
55 - 59	86	156,947	85	137,677	171	294,624
60 - 64	90	164,980	96	135,593	186	300,573
65 - 69	60	89,793	68	70,834	128	160,627
70 - 74	22	23,737	35	35,565	57	59,302
75 - 79	14	18,340	10	9,529	24	27,869
80 - 84	5	3,153	4	4,048	9	7,201
85 - 89	2	2,978	1	580	3	3,558
90 - 94	-	-	-	-	-	-
95 - 99	-	-	-	-	-	-
Over 100	-	-	-	-	-	-
<b>Totals</b>	<b>291</b>	<b>\$466,544</b>	<b>317</b>	<b>\$404,077</b>	<b>608</b>	<b>\$870,621</b>

**CLOSED PLAN INACTIVE VESTED MEMBERS  
AS OF JUNE 30, 2003  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
30-34			14					14
35-39			217	13	1			231
40-44			261	113	5			379
45-49			299	171	112	13	1	596
50-54			422	258	190	167	48	1,085
55-59			392	318	191	132	66	1,099
60			82	35	21	8	13	159
61			68	34	16	6	7	131
62			45	25	14	7	5	96
63			44	18	10	6	2	80
64			52	19	8	2	4	85
65			33	11	6	3	3	56
66			21	11	5	8	2	47
67			12	11	7	2	1	33
68			13	6	4	3	2	28
69			14	6	5	1	3	29
70			16	5	3	4	3	31
71			8	10	7	4	4	33
72			14	8	5	2	4	33
73			7	10	8	4	3	32
74			6	6	5	1	7	25
75			4	6	9	3	5	27
76			10	6	9	5	5	35
77			11	8	6	6	1	32
78			10	9	6	8	6	39
79 & Over			55	34	32	19	37	177
<b>Totals</b>	-	-	<b>2,130</b>	<b>1,151</b>	<b>685</b>	<b>414</b>	<b>232</b>	<b>4,612</b>

**NEW PLAN INACTIVE VESTED MEMBERS  
AS OF JUNE 30, 2003  
BY ATTAINED AGE AND YEARS OF SERVICE**

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Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
25-29			1					1
30-34			14					14
35-39			57	2				59
40-44			72	17	5			94
45-49			62	41	18	1		122
50-54			75	52	33	16	2	178
55-59			68	27	27	13	3	138
60			14	6		1		21
61			5	3		1		9
62			10	2			1	13
63			2					2
64			7	1		1		9
65			4		1			5
66			1					1
68			2					2
69			1					1
74			1					1
76							1	1
<b>Totals</b>	-	-	<b>396</b>	<b>151</b>	<b>84</b>	<b>33</b>	<b>7</b>	<b>671</b>

**CLOSED PLAN ACTIVE MEMBERS  
AS OF JUNE 30, 2003  
BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
20-24	97							97
25-29	420	87	1					508
30-34	177	1,149	738	2				2,066
35-39	118	488	1,950	771	3			3,330
40-44	120	319	982	2,584	728	3		4,736
45-49	98	387	1,007	1,459	2,619	1,751	5	7,326
50-54	84	357	1,079	1,675	1,694	4,981	2,779	12,649
55-59	42	166	609	1,077	1,184	1,563	4,768	9,409
60	6	19	63	97	146	146	560	1,037
61	7	21	52	74	83	118	473	828
62	2	12	31	50	58	64	293	510
63	6	13	17	28	41	40	216	361
64	2	4	14	25	28	35	160	268
65	3	3	6	14	21	24	105	176
66	2	1	5	7	6	6	68	95
67	4	3	5	8	5	9	39	73
68	4	1	5	2	3	4	34	53
69	5	2	3	1	4	6	34	55
70	2	1		1	2	2	23	31
71	1		2	1	2	2	13	21
72	1	3	3		1	1	15	24
73		1	1			2	7	11
74	1	1			1	2	4	9
75		1				1	5	7
76			1	1			6	8
77		1				1	1	3
78		1			1		1	3
79 & Over		1		1	3	4	2	11
<b>Totals</b>	<b>1,202</b>	<b>3,042</b>	<b>6,574</b>	<b>7,878</b>	<b>6,633</b>	<b>8,765</b>	<b>9,611</b>	<b>43,705</b>

**NEW PLAN ACTIVE MEMBERS AS OF JUNE 30, 2003**  
**BY ATTAINED AGE AND YEARS OF SERVICE**

Attained Age	Years of Service to Valuation Date							Total
	0-4	5-9	10-14	15-19	20-24	25-29	30+	
20-24	1,688							1,688
25-29	6,126	1,611	2					7,739
30-34	2,057	3,661	316	3				6,037
35-39	1,254	1,322	771	142	2			3,491
40-44	1,166	1,015	375	419	105	1		3,081
45-49	1,002	1,022	400	246	283	130	1	3,084
50-54	690	817	410	260	191	294	131	2,793
55-59	384	327	201	147	91	101	208	1,459
60	37	30	16	12	8	6	10	119
61	35	20	13	15	4	4	16	107
62	24	19	9	3	6	4	9	74
63	23	15	8	3	6	3	7	65
64	21	5	3	3	1	1	4	38
65	14	8	4				1	27
66	10	9	1	4	1	1		26
67	19	3	1			2		25
68	16	3		1	1			21
69	8	2			1		1	12
70	2	4		2				8
71	7	5						12
72	1					1		2
73	7	1	1	1				10
74	6			1				7
75	3	2						5
76	1	1						2
78		1			1			2
79 & Over		2						2
<b>Totals</b>	<b>14,601</b>	<b>9,905</b>	<b>2,531</b>	<b>1,262</b>	<b>701</b>	<b>548</b>	<b>388</b>	<b>29,936</b>

## **SECTION F**

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### **Disclosures Required by GASB Statements No. 25 and No. 27**

**GASB STATEMENTS NO. 25 AND NO. 27**  
**REQUIRED SUPPLEMENTARY INFORMATION**

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Under the Governmental Accounting Standards Board (GASB) Statements No. 25 and No. 27, certain information about the plan is required to be disclosed. The information presented in the required supplementary schedules was determined as part of the actuarial valuations at the dates indicated.

Additional information as of the latest actuarial valuation follows:

Valuation date	June 30, 2003
Actuarial Cost Method	Entry Age Actuarial Cost Method
Amortization method	Level Percent of Pay Closed
Amortization period	36 Years
Asset valuation method	4-year smoothed market value with corridor
Actuarial assumptions:	
Investment rate of return	7.50%
Projected salary increases*	4.50%-15.50%
*Includes wage inflation at	4.50%
Cost-of-living adjustments	Unscheduled, periodic increases

Membership in the plan consisted of the following at June 30, 2003, the date of the latest actuarial valuation:

	<b>Closed Plan</b>	<b>New Plan</b>	<b>Totals</b>
Retired members and beneficiaries receiving benefits	35,627	608	36,235
Terminated plan members entitled to but not yet receiving benefits			
Vested	4,612	671	5,283
Non-Vested	10,996	19,407	30,403
Active plan members	43,705	29,936	73,641
Totals	94,940	50,622	145,562

**GASB STATEMENTS NO. 25 AND NO. 27**  
**REQUIRED SUPPLEMENTARY INFORMATION**

*Closed Plan*

Actuarial Valuation Date June 30	Actuarial Value of Assets (a)	Schedule of Funding Progress				UAAAL as a % of Covered Payroll [(b) - (a)] / (c)
		Actuarial Liability (AAL) -- Entry-Age -- (b)	Unfunded AAL (UAAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	
1992*	\$2,376,039,915	\$ 7,949,159,660	\$5,573,119,745	29.9 %	\$2,416,262,885	230.7 %
1993	2,592,320,494	8,508,035,949	5,915,715,455	30.5	2,536,164,646	233.3
1994	2,808,649,929	9,087,583,424	6,278,933,495	30.9	2,614,914,517	240.1
1995	2,983,579,054	9,674,536,606	6,690,957,552	30.8	2,728,810,964	245.2
1996	3,242,032,156	10,283,174,065	7,041,141,909	31.5	2,805,823,234	250.9
1997*	3,678,102,810	10,868,423,166	7,190,320,356	33.8	2,739,435,972	262.5
1998	4,130,388,693	11,481,766,668	7,351,377,975	36.0	2,699,182,719	272.4
1999	4,730,666,420	12,172,501,450	7,441,835,030	38.9	2,755,489,026	270.1
2000	5,209,889,286	12,409,275,218	7,199,385,932	42.0	2,561,532,743	281.1
2001	5,363,497,813	12,695,787,691	7,332,289,878	42.2	2,564,451,154	285.9
2002*	5,555,352,257	13,497,778,031	7,942,425,774	41.2	2,604,955,746	304.9
2003*	5,728,553,155	13,354,866,440	7,626,313,285	42.9	2,448,271,197	311.5

\* Revised benefits and/or actuarial assumptions and/or methods.

*Schedule of Employer Contributions*

Fiscal Year	Valuation Date June 30	Contribution Rates		
		as Percents of Valuation Payroll	Annual Required Contribution	Percentage Contributed
1993-1994	1992	16.32%	\$416,022,498	59.0%
1994-1995	1993	16.31	436,399,180	61.0
1995-1996	1994	16.56	456,846,570	63.0
1996-1997	1995	16.74	481,927,124	65.0
1997-1998	1996	16.96	502,040,298	N/A
1998-1999	1997	16.77	484,670,600	N/A
1999-2000	1998	17.10	486,946,058	N/A
2000-2001	1999	17.02	494,778,365	N/A
2001-2002	2000	17.55	474,274,191	N/A
2002-2003	2001	17.85	496,033,881	N/A
2003-2004	2002	18.36	532,326,328	N/A
2004-2005	2003	19.31	516,267,015	N/A

**GASB STATEMENTS NO. 25 AND NO. 27**  
**REQUIRED SUPPLEMENTARY INFORMATION**

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*New Plan*

Actuarial Valuation Date June 30	Actuarial Value of Assets (a)	Schedule of Funding Progress				UAAAL as
		Actuarial Accrued Liability (AAL) -- Entry-Age -- (b)	Unfunded AAL (UAAL) (b) - (a)	Funded Ratio (a) / (b)	Covered Payroll (c)	a % of Covered Payroll [(b) - (a)] / (c)
1996	\$ 20,587,223	\$ 47,614,251	\$ 27,027,028	43.2%	\$ 72,506,252	37.3%
1997	72,035,629	176,236,990	104,201,361	40.9	245,167,941	42.5
1998	135,923,370	298,407,427	162,484,057	45.5	395,757,887	41.1
1999	240,053,914	498,422,993	258,369,079	48.2	538,837,104	48.0
2000	368,157,499	705,790,225	337,632,726	52.2	631,071,749	53.5
2001	447,261,751	828,038,282	380,776,531	54.0	754,425,873	50.5
2002	621,222,272	1,166,883,205	545,660,933	53.2	1,004,514,690	54.3
2003	825,811,772	1,392,472,616	566,660,844	59.3	1,136,863,716	49.8

*Schedule of Employer Contributions*

Fiscal Year	Valuation Date June 30	Contribution Rates as Percents of Valuation Payroll	Annual Required Contribution	Percentage Contributed
1997-1998	1996	9.02%	\$ 6,899,767	N/A
1998-1999	1997	9.12	23,589,079	N/A
1999-2000	1998	9.07	37,869,479	N/A
2000-2001	1999	9.28	52,754,308	N/A
2001-2002	2000	9.54	63,515,478	N/A
2002-2003	2001	9.32	76,192,316	N/A
2003-2004	2002	9.50	106,214,746	N/A
2004-2005	2003	8.29	102,918,990	N/A

**GASB STATEMENTS NO. 25 AND NO. 27**  
**STATEMENT OF CHANGES IN PLAN NET ASSETS, 2002-2003**

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<b>Net Assets at Beginning of Year</b>	<b>\$ 5,722,753,180</b>
Additions	
Contributions	
Member Contributions	\$ 109,500,298
Employer Contributions	575,065,732
Employer Contributions - Pension Stabilization	30,000,000
<b>Total Contributions</b>	<b>\$ 714,566,030</b>
Investments	
Net Appreciation (Depreciation) in Fair Value	\$ 142,330,854
Interest Income	174,585,194
Dividend Income	38,389,659
Securities Lending Income	6,504,216
Less Investment Expense	
Investment Fees	(11,782,712)
Securities Lending Fees	(5,249,877)
<b>Net Investment Income</b>	<b>\$ 344,777,334</b>
Other Additions	
Transfers From Other Retirement Funds	\$ 3,846,621
Annuity and Disability Refunds	1,058,198
Outdated Benefit Checks	0
Reimbursement of Administrative Expense	295,580
<b>Total Other Additions</b>	<b>\$ 5,200,399</b>
<b>Total Additions</b>	<b>\$ 1,064,543,763</b>
Deductions	
Annuity and Disability Benefits	\$ 615,973,041
Voluntary and Death Withdrawals	7,396,641
Claims on Outdated Benefit Checks	(51,147)
Administrative Expenses	3,363,335
Capital Projects	3,297,613
Depreciation Expenses	16,814
Transfers to Other Retirement Funds	1,773,638
<b>Total Deductions</b>	<b>\$ 631,769,935</b>
<b>Change in Net Assets Held in Trust for Pension Benefits</b>	<b>\$ 432,773,828</b>
<b>Net Assets at End of Year</b>	<b>\$ 6,155,527,008</b>

**GASB STATEMENTS NO. 25 AND NO. 27**  
**STATEMENT OF PLAN NET ASSETS, JUNE 30, 2003**

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**Assets**

Cash and Cash Equivalents \$ 813,083,966

Securities Lending Collateral \$ 780,206,749

Receivables

Employer Contributions \$ 28,325,516

Due from PERF 7,479,139

Member Contributions 27,891,493

Due from Lottery Commission 7,500,000

Securities Sold 60,095,219

Investments Interest 31,484,239

Total Receivables \$ 162,775,606

Investments

U.S. Treasury and Agency Obligations \$ 775,247,603

Corporate Bonds and Notes 1,193,587,424

Foreign Bonds 2,671,689

Equity Securities 1,893,072,794

Foreign Equity Securities 490,830,414

Mortgage Securities 1,056,637,088

Venture Capital & Partnerships 16,224,040

State & Municipal Securities 3,305,837

Real Estate 260,000

Total Investments \$5,431,836,889

Furniture and Equipment 88,843

Insurance Premium Paid in Advance 27

Total Assets \$7,187,992,080

**Liabilities**

Accrued Benefits Payable \$ -

Accrued Salaries Payable 141,476

Accrued Liability for Compensated Absences - Current 114,614

Accounts Payable 3,142,161

Due to PERF 5,825,229

Securities Lending Collateral 780,206,749

Payables for Securities Purchased 242,882,913

Total Current Liabilities \$1,032,313,142

Accrued Liability for Compensated Absences - Long-Term 151,930

Total Liabilities \$1,032,465,072

**Net Assets Held in Trust for Pension Benefits \$6,155,527,008**

## **SECTION G**

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### **Actuarial Assumptions, Methods and Definitions**

## SUMMARY OF ASSUMPTIONS AND METHODS USED FOR ISTRF ACTUARIAL VALUATION

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The assumptions used in this valuation were adopted for the June 30, 2003 valuation following a study of experience covering the period July 1, 1996 through June 30, 2002.

*The investment return rate* used in making the valuations was 7.5% per year, compounded annually (net after administrative expenses). Considering other financial assumptions, the 7.5% investment return rate translates to an assumed real rate of return of 3.0% over across-the-board salary increases and 3.5% over price inflation.

*Pay increase assumptions* for individual active members are shown based on service on page G-8. Part of the assumption for each age is for a merit and/or seniority increase, 4.0% recognizes price inflation and 0.5% recognizes real wage growth.

*Total active member payroll* is assumed to increase 4.5% annually, which is the portion of the individual pay increase assumptions attributable to inflation and other factors.

*Price inflation*, although not directly tied to benefits,, was assumed to be 4.0% and is a component of the economic model used to determine the total wage inflation.

*The number of active members* is assumed to continue at the present number.

*The mortality table*, for post-retirement mortality and pre-retirement mortality, used in valuing allowances to be paid was the 1983 Group Annuity Mortality Male Table set back 5 years for men and 7 years for women. Related values are shown on pages H-3 and H-4. Disabled post-retirement mortality used was the 1983 Group Annuity Male Mortality Table, set forward 5 years for men and 3 years for women.

*Probabilities of retirement* are shown on page G-5.

*The probabilities of withdrawal* are shown for sample ages on page G-6.

*The probabilities of disability* are shown for sample ages on page G-7. All disabilities were assumed to receive “classroom disability” benefits.

*The entry age normal actuarial cost method of valuation* was used in determining age and service allowance liability and normal cost, and vesting liability and normal cost.

Differences in the past between assumed experience and actual experience (“actuarial gains and losses”) become part of unfunded actuarial accrued liability.

Unfunded actuarial accrued liability is amortized to produce payments (principal and interest) which are level percent-of-payroll contributions.

*Employer contribution dollars* were assumed to be *paid in equal installments* throughout the employer fiscal year.

*Present assets (cash and investments) were valued using the funding value.*

*The data about persons now covered and about present assets* were furnished by the Fund’s Administrative Staff. Although examined for general reasonableness, the data was not otherwise audited by the Actuary.

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The actuarial valuation computations were made by or under the supervision of a Member of the American Academy of Actuaries (MAAA).

## SINGLE LIFE RETIREMENT VALUES

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Sample Attained Ages	Present Value of \$1 Monthly for Life		Future Life Expectancy (years)	
	Males	Females	Males	Females
45	\$150.38	\$152.18	38.46	40.38
50	144.94	147.28	33.74	35.62
55	138.13	141.02	29.18	30.98
60	129.80	133.35	24.82	26.55
65	119.40	123.85	20.64	22.29
70	106.72	112.02	16.69	18.23
75	92.80	98.44	13.18	14.52
80	78.28	84.17	10.15	11.31
Ref:	#166sb3x1	#167sb0x1		

Sample Attained Ages	Portion of Age 55 Members Still Alive	
	Males	Females
55	100.00 %	100.00 %
60	97.64	98.05
65	94.17	95.07
70	88.96	90.74
75	80.41	83.77
80	67.75	72.81
85	50.97	57.78

## POST-RETIREMENT MORTALITY

Age	Regular		Disabled		Age	Regular		Disabled	
	Male	Female	Male	Female		Male	Female	Male	Female
21	0.00033	0.00032	0.00049	0.00044	61	0.00662	0.00566	0.01758	0.01387
22	0.00034	0.00033	0.00051	0.00046	62	0.00714	0.00613	0.01980	0.01559
23	0.00035	0.00033	0.00054	0.00049	63	0.00772	0.00662	0.02223	0.01758
24	0.00037	0.00034	0.00057	0.00051	64	0.00838	0.00714	0.02482	0.01980
25	0.00038	0.00035	0.00061	0.00054	65	0.00916	0.00772	0.02753	0.02223
26	0.00039	0.00037	0.00065	0.00057	66	0.01006	0.00838	0.03035	0.02482
27	0.00041	0.00038	0.00069	0.00061	67	0.01113	0.00916	0.03337	0.02753
28	0.00042	0.00039	0.00073	0.00065	68	0.01239	0.01006	0.03668	0.03035
29	0.00044	0.00041	0.00078	0.00069	69	0.01387	0.01113	0.04039	0.03337
30	0.00046	0.00042	0.00086	0.00073	70	0.01559	0.01239	0.04460	0.03668
31	0.00049	0.00044	0.00091	0.00078	71	0.01758	0.01387	0.04939	0.04039
32	0.00051	0.00046	0.00097	0.00086	72	0.01980	0.01559	0.05476	0.04460
33	0.00054	0.00049	0.00104	0.00091	73	0.02223	0.01758	0.06068	0.04939
34	0.00057	0.00051	0.00113	0.00097	74	0.02482	0.01980	0.06713	0.05476
35	0.00061	0.00054	0.00124	0.00104	75	0.02753	0.02223	0.07407	0.06068
36	0.00065	0.00057	0.00137	0.00113	76	0.03035	0.02482	0.08148	0.06713
37	0.00069	0.00061	0.00153	0.00124	77	0.03337	0.02753	0.08932	0.07407
38	0.00073	0.00065	0.00172	0.00137	78	0.03668	0.03035	0.09753	0.08148
39	0.00078	0.00069	0.00193	0.00153	79	0.04039	0.03337	0.10605	0.08932
40	0.00086	0.00073	0.00218	0.00172	80	0.04460	0.03668	0.11484	0.09753
41	0.00091	0.00078	0.00247	0.00193	81	0.04939	0.04039	0.12417	0.10605
42	0.00097	0.00086	0.00279	0.00218	82	0.05476	0.04460	0.13387	0.11484
43	0.00104	0.00091	0.00314	0.00247	83	0.06068	0.04939	0.14407	0.12417
44	0.00113	0.00097	0.00351	0.00279	84	0.06713	0.05476	0.15486	0.13387
45	0.00124	0.00104	0.00391	0.00314	85	0.07407	0.06068	0.16631	0.14407
46	0.00137	0.00113	0.00432	0.00351	86	0.08148	0.06713	0.17821	0.15486
47	0.00153	0.00124	0.00476	0.00391	87	0.08932	0.07407	0.19046	0.16631
48	0.00172	0.00137	0.00520	0.00432	88	0.09753	0.08148	0.20301	0.17821
49	0.00193	0.00153	0.00566	0.00476	89	0.10605	0.08932	0.21790	0.19046
50	0.00218	0.00172	0.00613	0.00520	90	0.11484	0.09753	0.23409	0.20301
51	0.00247	0.00193	0.00662	0.00566	91	0.12417	0.10605	0.24844	0.21790
52	0.00279	0.00218	0.00714	0.00613	92	0.13387	0.11484	0.26395	0.23409
53	0.00314	0.00247	0.00772	0.00662	93	0.14407	0.12417	0.28080	0.24844
54	0.00351	0.00279	0.00838	0.00714	94	0.15486	0.13387	0.29915	0.26395
55	0.00391	0.00314	0.00916	0.00772	95	0.16631	0.14407	0.31918	0.28080
56	0.00432	0.00351	0.01006	0.00838	96	0.17821	0.15486	0.34109	0.29915
57	0.00476	0.00391	0.01113	0.00916	97	0.19046	0.16631	0.36505	0.31918
58	0.00520	0.00432	0.01239	0.01006	98	0.20301	0.17821	0.39310	0.34109
59	0.00566	0.00476	0.01387	0.01113	99	0.21790	0.19046	0.42726	0.36505
60	0.00613	0.00520	0.01559	0.01239	100	0.23409	0.20301	0.46953	0.39310
Ref	#166sb3x1	#167sb0x1	#166sb-7x1	#167sb-10x1		#166sb3x1	#167sb0x1	#166sb-7x1	#167sb-10x1

**PROBABILITIES OF AGE AND SERVICE RETIREMENT  
FOR MEMBERS ELIGIBLE TO RETIRE**

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Regular			Rule of			Early		
Age	Male	Female	Age	Male	Female	Age	Male	Female
						50	0.0100	0.0100
						51	0.0100	0.0100
						52	0.0100	0.0100
						53	0.0100	0.0100
						54	0.0200	0.0200
			55	0.1100	0.1100	55	0.0300	0.0300
			56	0.1000	0.1100	56	0.0300	0.0350
			57	0.1000	0.1200	57	0.0350	0.0400
			58	0.1200	0.1200	58	0.0400	0.0500
			59	0.1500	0.1600	59	0.0300	0.0600
60	0.1500	0.1500	60	0.1500	0.1500			
61	0.1500	0.1500	61	0.1500	0.1500			
62	0.2500	0.2000	62	0.2500	0.2000			
63	0.2000	0.2000	63	0.2000	0.2000			
64	0.2000	0.2000	64	0.2000	0.2000			
65	0.3500	0.3500	65	0.3500	0.3500			
66	0.2500	0.2500	66	0.2500	0.2500			
67	0.2000	0.2500	67	0.2000	0.2500			
68	0.2000	0.3000	68	0.2000	0.3000			
69	0.2000	0.3000	69	0.2000	0.3000			
70	1.0000	1.0000	70	1.0000	1.0000			
Ref	485	732		486	734		435	481

**WITHDRAWAL RATES  
PRIOR TO ELIGIBILITY FOR RETIREMENT**

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Years of Service	Service Based	
	Male	Female
0-1	0.3000	0.3500
1-2	0.1700	0.1800
2-3	0.1100	0.1400
3-4	0.0900	0.1100
4-5	0.0700	0.1000
5-6	0.0600	0.0800
6-7	0.0500	0.0650
7-8	0.0450	0.0600
8-9	0.0400	0.0550
9-10	0.0400	0.0500
Ref	293	294

Attained Age	Age Based	
	Male	Female
25	0.0830	0.0950
26	0.0830	0.0950
27	0.0810	0.0950
28	0.0720	0.0880
29	0.0630	0.0800
30	0.0540	0.0720
31	0.0460	0.0650
32	0.0380	0.0580
33	0.0360	0.0520
34	0.0320	0.0480
35	0.0290	0.0430
36	0.0260	0.0380
37	0.0230	0.0340
38	0.0210	0.0310
39	0.0190	0.0290
40	0.0180	0.0260
41	0.0170	0.0240
42	0.0160	0.0220
43	0.0160	0.0210
44	0.0160	0.0200
45	0.0150	0.0200
46	0.0150	0.0200
47	0.0150	0.0200
48	0.0150	0.0200
49	0.0150	0.0200
50	0.0150	0.0200
51	0.0140	0.0200
52	0.0140	0.0200
53	0.0140	0.0200
54	0.0140	0.0190
55	0.0130	0.0180
56	0.0130	0.0160
57	0.0120	0.0140
58	0.0120	0.0140
59	0.0120	0.0140
60	0.0120	0.0140
Ref	#202 x 0.8	#203 x 1

**DISABILITY RATES  
PRIOR TO ELIGIBILITY FOR RETIREMENT**

---

Attained Age	Age Based	
	Male	Female
20	0.0001	0.0001
21	0.0001	0.0001
22	0.0001	0.0001
23	0.0001	0.0001
24	0.0001	0.0001
25	0.0001	0.0001
26	0.0001	0.0001
27	0.0001	0.0001
28	0.0001	0.0001
29	0.0001	0.0001
30	0.0001	0.0001
31	0.0001	0.0001
32	0.0001	0.0001
33	0.0001	0.0001
34	0.0001	0.0001
35	0.0001	0.0001
36	0.0001	0.0001
37	0.0001	0.0001
38	0.0001	0.0001
39	0.0001	0.0001
40	0.0001	0.0001
41	0.0002	0.0002
42	0.0002	0.0002
43	0.0002	0.0002
44	0.0002	0.0002
45	0.0002	0.0002
46	0.0003	0.0003
47	0.0003	0.0003
48	0.0004	0.0004
49	0.0004	0.0004
50	0.0005	0.0005
51	0.0006	0.0006
52	0.0007	0.0007
53	0.0008	0.0008
54	0.0008	0.0008
55	0.0009	0.0009
56	0.0009	0.0009
57	0.0010	0.0010
58	0.0010	0.0010
59	0.0010	0.0010
60	0.0010	0.0010
Ref	#135 x 0.1	#135 x 0.1

## PAY INCREASE ASSUMPTIONS FOR AN INDIVIDUAL MEMBER

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Years of Service	Salary Increase Assumptions for an Individual Member		
	Merit & Seniority	Base (Economic)	Increase Next Year
1	11.00%	4.50%	15.50%
2	7.50%	4.50%	12.00%
3	5.50%	4.50%	10.00%
4	5.50%	4.50%	10.00%
5	5.00%	4.50%	9.50%
6	4.50%	4.50%	9.00%
7	4.50%	4.50%	9.00%
8	4.00%	4.50%	8.50%
9	4.00%	4.50%	8.50%
10	3.50%	4.50%	8.00%
11	3.00%	4.50%	7.50%
12	3.00%	4.50%	7.50%
13	2.50%	4.50%	7.00%
14	2.50%	4.50%	7.00%
15	2.50%	4.50%	7.00%
16	2.50%	4.50%	7.00%
17	2.50%	4.50%	7.00%
18	2.50%	4.50%	7.00%
19	2.00%	4.50%	6.50%
20	1.50%	4.50%	6.00%
21	1.00%	4.50%	5.50%
22	0.75%	4.50%	5.25%
23	0.50%	4.50%	5.00%
24	0.25%	4.50%	4.75%
25	0.25%	4.50%	4.75%
26	0.25%	4.50%	4.75%
27	0.25%	4.50%	4.75%
28	0.25%	4.50%	4.75%
29	0.25%	4.50%	4.75%
30	0.25%	4.50%	4.75%
31	0.25%	4.50%	4.75%
32	0.25%	4.50%	4.75%
33	0.25%	4.50%	4.75%
34	0.25%	4.50%	4.75%
35	0.25%	4.50%	4.75%
36	0.25%	4.50%	4.75%
37	0.25%	4.50%	4.75%
38	0.25%	4.50%	4.75%
39	0.25%	4.50%	4.75%
40	0.25%	4.50%	4.75%
Ref.	64		

## MISCELLANEOUS AND TECHNICAL ASSUMPTIONS

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Marriage Assumption:	100% of members are assumed to be married for purposes of valuing death-in-service benefits.
Pay Increase Timing:	Beginning of (fiscal) year. Payroll amounts stated in the valuation data are amounts actually paid during the prior year.
Decrement Timing:	Retirement decrements are assumed to occur at the beginning of the year, other decrements are assumed to occur mid-year.
Eligibility Testing:	Eligibility for benefits is determined based upon the age nearest birthday and service nearest whole year on the date the decrement is assumed to occur.
Benefit Service:	Exact fractional service is used to determine the amount of benefit payable.
Decrement Relativity:	Decrement rates are used directly from the experience study, without adjustment for multiple decrement table effects.
Other:	Disability and withdrawal decrements do not operate after member reaches retirement eligibility. Only the withdrawal decrement operates during the first 5 years of service.
Miscellaneous Loading Factors:	The calculated normal, early retirement and vested deferred liabilities and normal costs were increased by 2% to account for the inclusion of unused sick leave in the calculation of Average Compensation.
Actuarial Equivalence Basis for Optional Forms of Payment	7.5% interest with a 40%/60% unisex blend of the 1983 Group Annuity Mortality table set back 3 years and the 1983 Group Annuity Mortality Table set back 7 years.

## **DEFINITIONS OF TECHNICAL TERMS**

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**ACCRUED SERVICE.** Service credited under the system which was rendered before the date of the actuarial valuation.

**ACTUARIAL ACCRUED LIABILITY.** The difference between the actuarial present value of future benefit payments and the actuarial present value of future normal costs. Also referred to as “accrued liability” or “past service liability.”

**ACTUARIAL ASSUMPTIONS.** Estimates of expected future experience with respect to rates of mortality, disability, turnover, retirement, rate or rates of investment return and pay increases. Decrement assumptions (rates of mortality, disability, turnover and retirement) are generally based on past experience, often modified for projected changes in conditions. Economic assumptions (pay increases and investment return) consist of the underlying rates in an inflation-free environment plus a provision for a long-term average rate of inflation.

**ACTUARIAL COST METHOD.** A mathematical budgeting procedure for allocating the dollar amount of the “actuarial present value of future benefit payments” between future normal costs and actuarial accrued liabilities. Sometimes referred to as the “actuarial funding method.”

**ACTUARIAL EQUIVALENT.** One series of payments is said to be actuarially equivalent to another series of payments if the two series have the same actuarial present value.

**ACTUARIAL GAIN (LOSS).** The difference between actual unfunded actuarial accrued liability and anticipated unfunded actuarial accrued liability -- during the period between two valuation dates. It is a measurement of the difference between actual and expected experience.

**ACTUARIAL PRESENT VALUE.** The single amount now which is equal to a payment or series of payments in the future. It is determined by discounting future payments at predetermined rates of interest, and by probabilities of payment.

## **DEFINITIONS OF TECHNICAL TERMS (CONTINUED)**

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**AMORTIZATION.** Paying off a present value with periodic payments.

**NORMAL COST.** The portion of the actuarial present value of future benefits that is assigned to the current year by the actuarial cost method. Sometimes referred to as “current cost.”

**UNFUNDED ACTUARIAL ACCRUED LIABILITY.** The difference between the actuarial accrued liabilities and the actuarial value of assets. Sometimes referred to as “unfunded past service liability,” or “unfunded accrued liability” or simply as “unfunded liability.”

# **SECTION H**

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## **Financial Principles**

## **FUNDING OBJECTIVE**

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The funding objective of ISTRF is to establish and receive contributions which, when invested at the assumed rate of return, will ultimately accumulate assets over each member's working lifetime that will be sufficient to pay expected retirement allowances.

### **Plan Structures and Funding Arrangements**

The Indiana State Teachers' Retirement Fund (ISTRF) is comprised of a two-plan structure in compliance with Indiana Code Section 21-6.1-2-2:

- The **Closed Plan** consists of those members who were hired prior to July 1, 1995, and who have maintained continuous employment with the same school corporation or covered institution since that date.
- The **New Plan** consists of those members who were:
  - (a) hired on or after July 1, 1995, or
  - (b) hired before July 1, 1995, served in a position covered by ISTRF, and, subsequent to June 30, 1995, were either hired by another school corporation or institution covered by ISTRF, or were rehired by a covered prior employer.

### **Characteristics of the Closed Plan:**

1. Active membership in the Closed Plan continues to decline as members quit, become disabled, die, retire, or incur a change in status as described in (b) above, thereby automatically transferring to membership in the New Plan.
2. Closed Plan members are assumed to earn pay increases while they remain in active service. Therefore, based on the current actuarial assumptions, the Closed Plan payroll would intuitively continue to grow. However, due to the steadily declining population the net effect will be a steady decrease in the Closed Plan payroll until there are no active members in the Closed Plan. The contracting closed plan population and payroll present challenges for traditional level percent of payroll funding.
3. The pension benefits from the Closed Plan are funded by State appropriations (including short-term contributions of some revenue from the State Lottery). Annuity benefits payable from the Closed Plan are funded by the annuitization of Closed Plan member contributions at the time of retirement.

## **PLAN STRUCTURES AND FUNDING ARRANGEMENTS (CONTINUED)**

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### **Characteristics of the New Plan:**

1. As members depart from active service in the Closed Plan, their replacements will become members of the New Plan. If the New Plan were a stand-alone plan, this pattern of departures and hirings would produce a fairly constant population size. However, overall active membership in the New Plan is expected to increase over time due to the following factors:
  - (a) As Closed Plan members depart from active service, their replacements will become members of the New Plan; and
  - (b) The special provisions of Indiana Code Section 21-6.1-2-2 require that any member who changes jobs within the System or who is rehired within the System after a period of absence automatically becomes a New Plan member.
2. The result of an expanding membership in the New Plan is growth in the New Plan payroll. The expanding New Plan population and payroll present challenges to level percent-of-payroll funding.
3. Pension benefits payable from the New Plan are funded by contributions from local school corporations or other institutions that employ covered members. Annuity benefits payable at retirement from the New Plan are funded by New Plan members.

### **Funding Arrangements**

Prior to the legislation that established the two-plan structure in ISTRF, the pension benefits of the Indiana State Teachers' Retirement System were funded on a pay-as-you go system. Under this arrangement, amounts were appropriated to meet the current year's pension payment requirements. Pension benefits payable from the Closed Plan continue to be funded on this basis. In 1995, the Pension Stabilization Fund was set up for the Closed Plan. Since then, some pre-funding progress has been made via State appropriations to this Fund. Pension benefits payable from the New Plan are funded through percent-of-pay contributions. The Teachers' Retirement Board sets this contribution rate after reviewing the most recent actuarial valuation report. The current contribution rate of 9.0% was set by the Board in November, 2000. Under the direction of the State Legislature, the contribution rate will remain at this level at least until the fiscal year 2006-2007.

## **PLAN STRUCTURES AND FUNDING ARRANGEMENTS (CONTINUED)**

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### **Funding Arrangements (continued)**

Many PERS choose or are required by state law to pre-fund their plans. One of the advantages to pre-funding is that a pool of assets is created and built up to a point that investment income on those assets can become a major contributor to the fund. Under the pay-as-you-go funding method, the cost of the fund to the taxpayers starts off much lower, but continues to grow over generations of taxpayers, to a point much higher than under the pre-funding method. Essentially, by not pre-funding a plan, future taxpayers will have to pay more and inter-generational equity between generations of taxpayers will be compromised.

## THE ACTUARIAL VALUATION PROCESS

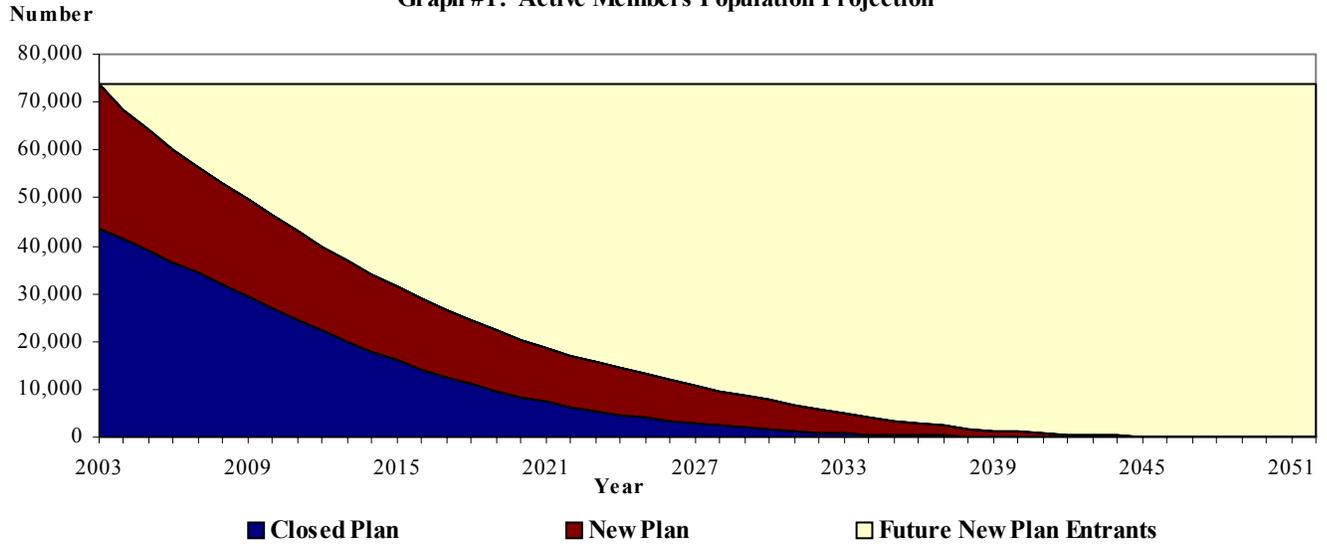
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*The actuarial valuation* is the mathematical process by which a contribution rate is determined. The flow of activity constituting the valuation may be summarized as follows:

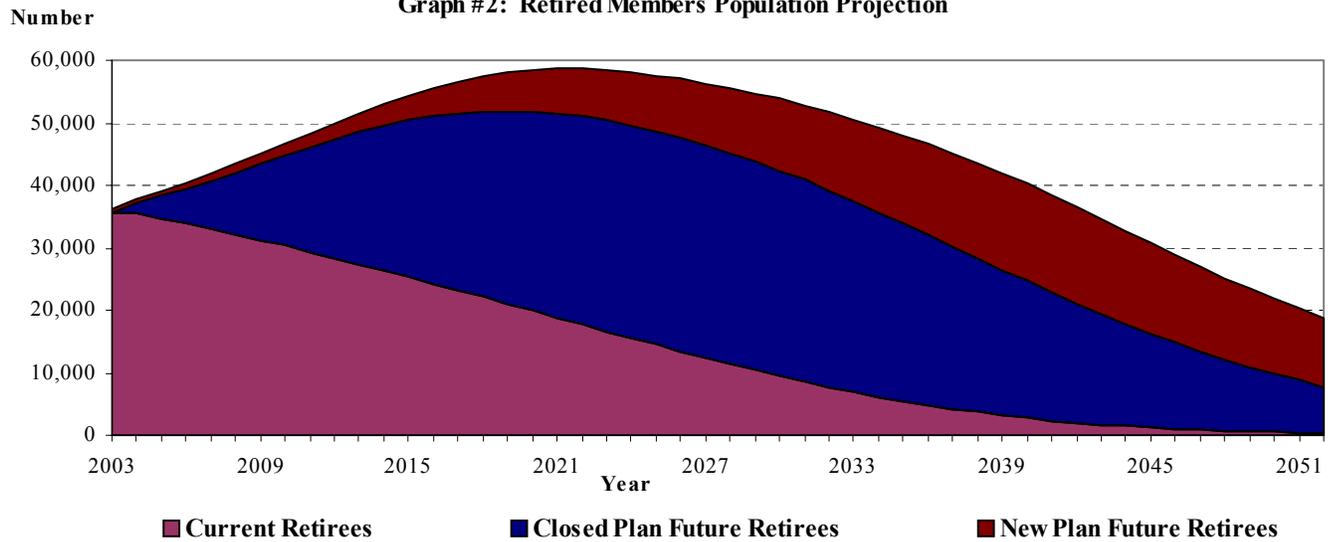
- A.    **Covered Person Data**, furnished by the plan administrator
  - Retired members and beneficiaries now receiving benefits
  - Former employees with vested benefits not yet payable
  - Active employees
  
- B. +   **Asset data (cash and investments)**, furnished by the plan administrator
  
- C. +   **Estimates of future experience (actuarial assumptions)**, which are established by the Board of Trustees after consulting with the actuary
  
- D. +   **Funding method** for employer contributions (the long-term planned pattern for employer contributions)
  
- E. +   **Mathematically combining the assumptions, the funding method, and the data**
  
- F. =   Determination of:
  - Plan financial position*
  - and/or *New Employer Contribution Rate*

# POPULATION PROJECTIONS

**Graph #1: Active Members Population Projection**



**Graph #2: Retired Members Population Projection**



The graphs above show projections of the number of active members and retired members that are expected to be in those two categories in the future.

The projected active population levels are developed from year to year by the application of assumptions regarding pre-retirement withdrawal from service, retirements, deaths, disabilities and the addition of new members. The projection depicted in Graph #1 indicates that by 2013, only half of the current active population will remain. ***This projection assumes a constant active population level of 73,641 in the future.***

The projected retired population levels shown in Graph #2 are developed from the current retired population, the addition of new retired members from the active population, and mortality assumptions. The projection indicates that around 2022 the Closed Plan retired population will peak. Note that this graph does not include future retirements of active members that will be hired in the future. If it did, the graph would not be a “hill”, but would plateau around 2027. At this point the ratio of the number of retired members to active members would remain somewhat constant at approximately 1.25 to 1. For further details on these projections see Section D of this report.



**GABRIEL, ROEDER, SMITH & COMPANY**  
Consultants & Actuaries

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One Towne Square ● Suite 800 ● Southfield, Michigan 48076 ● 248-799-9000 ● 800-521-0498 ● fax 248-799-9020

February 20, 2004

Dr. William Christopher  
Executive Director  
Indiana State Teachers' Retirement Fund  
150 West Market Street, Suite 300  
Indianapolis, Indiana 46204-2809

Dear Dr. Christopher:

Enclosed are 45 copies of the actuarial valuation of active and inactive members and retired lives of ISTRF as of June 30, 2003.

Please call me if you need additional copies.

Sincerely,

A handwritten signature in black ink that reads "Kenneth G. Alberts".

Kenneth G. Alberts

KGA:clb:lr  
Enclosures

cc: McCready and Keene, Inc.  
Judith A. Kermans  
Brian F. Dunn